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THE ADDRESS IN OPHTHALMIC SURGERY.

BY

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MR. PRESIDENT AND GENTLEMEN,—The Committee of the British Medical Association has done me the honour of requesting me to address you to-day on Ophthalmic Surgery, and to illustrate its progress and present position.

As it is my good fortune to have been connected with the Plymouth Eye Infirmary from boyhood, to have been numbered among its surgeons for more than twenty years, and to have been associated in its medical staff with my constant and talented friends Drs. Butter and Moore, I cannot with justice urge that I have not been favoured with opportunity for studying the subject on which it is my privilege to address you.

That your Committee might easily have entrusted this address to abler hands, is certain; still it is not for me to question their judgment, but, by my thoughtful attention to my subject, to prove how earnestly I seek their approval.

Vision is the noblest of the special senses; and its extinction is one of the heaviest afflictions which can befall man. The Christian philosopher selects the mechanical and optical construction of the eye, as one of the most striking proofs of design and adaptation of organisation to a certain result, discoverable in creation. The study of the phenomena of light has engaged the faculties of philosophers in all ages. The astronomer, the mathematician, and the optician, have earnestly investigated its laws.

Thus, if we consider vision in relation to natural objects, to light itself, and the marvellous adaptation of both to the optical apparatus, the eye, it is evident that a subject of vast importance, magnitude, and beauty, is presented to the mind.

In the wondrous days in which we live, art and science, but especially the latter, progress with rapid strides; on each pursuit, the student stamps his motto, "Excelsior." The son plants his footsteps in the expiring tracks of his father, and, with the fresh and vigorous impulses of youth, outsteps the past.

But science is yet in its cradle. Much has been achieved; fresh victories are before us, and many laurels yet to be won. Let these considerations stimulate to fresh and vigorous exertion.

During the present century, surgery has progressed rapidly; not only have its achievements been brilliant and striking, but charged with real benefit and lasting good. And in this onward course, ophthalmic surgery has acquired and maintained an honourable place. The inventive genius of the French, the patient industry of the German, and the eminently practical quality of the British schools, have mainly contributed to this onward movement.

The object of my present paper is practically to inform you of that which is new; and to select from the new, the useful; to state what my own experience has tested, and what is still based upon the *dicta* and experience of others.

It is impossible to observe any precise system in the following remarks; yet, as far as possible, I shall review the surgery of the different ocular structures *seriatim*, beginning with the appendages of the organ, and thence passing backwards to the retina.

ENTROPIUM. Entropium, or inversion of the eyelid, has many modifications, and is produced by a variety of causes—many of which are traumatic, or otherwise accidental. Idiopathic entropium is most prevalent in the aged, and results from the spasmodic action of the inner fibres of the orbicularis muscle upon relaxed integument. Until recently, simple excision of an elliptic portion of the relaxed skin, in size adapted to the extent of the disease, was resorted to; the gaping edges of the wound being united by suture.

Mr. Walton, in his excellent work on *Operative Ophthalmic Surgery*, has ably described the action of the orbicularis muscle in the production of this affection. He cites the case of Dr. Robert Taylor, who can invert his palpebræ at will; and on the muscular action of the orbicularis in causing inversion, he bases his operation for entropium. It is this. The skin being made tense by an assistant, the surgeon makes two incisions through the skin and muscle, as shown in this diagram, which

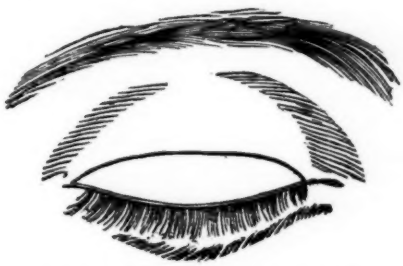

Fig. 1.—Mr. Walton's operation for Entropium.

is copied from Mr. Walton's book. The flap is drawn forwards, and slowly dissected away by vertical strokes of a small scalpel, great care being observed to remove all the muscular fibres. Three or four sutures are then inserted, and cold water dressing applied. As a slight and valuable modification of this operation, I have slipped a small horn spatula inside the lid, and found it very useful in stretching it, and affording resistance to the knife. I have been so constantly successful in curing the disease by this operation, that I confidently recommend its adoption in suitable cases.

In entropium or trichiasis, or both combined, Mr. Streatfeild has lately devised and advocated an operation, which he calls *grooving the fibro-cartilage*.

The cases most adapted to this proceeding are those in which the cartilage is thick, the inverted lashes are together (not here and there), and normal in appearance, although abnormal in position. He passes the inner surface of Desmarres' ring-forceps against the palpebral conjunctiva, then brings down the opposite blade upon the skin, previously made tense; the blades are then screwed together to prevent bleeding. With a small scalpel, the skin is cut through near and parallel to the edge of the lid, and rather longer than the extent of lashes to be rectified; this incision is now extended to the cartilage just beyond the roots of the lashes. A parallel incision is next carried through the skin and muscle down to the cartilage, further from the lid's margin, so as to include a long narrow slip of skin, etc. This is now excised, and the cartilage fully exposed. A groove is formed by cutting out a triangular strip of cartilage, whose apex is towards the conjunctiva. The cartilage should not be entirely cut through; and this is best accomplished by using the convex edge of the scalpel, and not its point. I have not yet performed this operation, but it seems a feasible one. Mr. Streatfeild has kindly written to me on the subject, and speaks confidently in favour of the plan; but it appears as yet to be *sub judice*, for, in the *Ophthalmic Hospital Reports*, this remark occurs:—"It has in several cases proved satisfactory, but its value requires ex-

tensive testing." The object of the operation is to form a firm and depressed cicatrix in the lid, which limits the free portion of the orbicularis muscle to the boundary of the scar, and

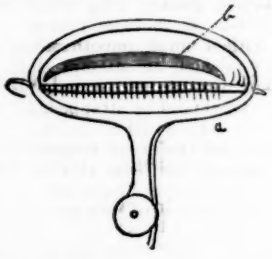

Fig. 2.—a. Ring of Desmarres' forceps. b. Incision for grooving the fibro-cartilage.

causes the lashes to be directed towards it. This diagram (Fig. 2) is copied from Mr. Streatfeild's paper on the subject, in the *Ophthalmic Hospital Reports*.

Ectropium is the reverse of entropium. In its production, various mechanical and vital causes operate. As most of the cases which demand surgical interference are the product of mechanical or chemical injury, and are therefore endless both in the extent and nature of deformity, so the surgery required for their cure is alike varied in character. The slightest forms are remediable by removal of the cicatrix, the separation of adjacent skin from its subcutaneous connections, the sliding into contact opposed cut edges, and their union by hare-lip or interrupted suture. But the severer forms of the deformity almost invariably demand ablation of the cicatrix and transplantation of sound integument from the vicinity.

In 1857, Mr. Teale, senior, published a short memoir on plastic operations, in which he records some good cases of restoration of both lids by transplantation of skin. In these instances, the deformities were produced by burns. By Mr. Teale's method, my friend and colleague, Mr. Eccles, lately remedied an ectropium of both lids of a very aggravated character. The result was very gratifying and creditable.

Case. Susan Howell, aged 16, was admitted into the Plymouth Eye Infirmary in May 1859. She was subject to epileptic fits, in one of which she fell into the fire and burnt her face very severely, eventually causing complete eversion of both lids of the right eye. The border of the upper lid, with a few straggling eyelashes, was amalgamated with the frontal integument, with eversion and exposure of its conjunctival surface. The cornea, constantly exposed, had begun to ulcerate. After consultation with his colleagues, Mr. Russel Rendle and myself, Mr. Eccles, on the 19th of May, proceeded to form a new lower lid. This he did by dissecting the lid upwards from its connections, to such an extent as to allow of its being readily placed in its natural position. The gap formed was filled by a piece of sound integument borrowed from the face in front of the ear. This transplanted tissue was larger than the space to be filled up, to allow for subsequent shrinking. Twelve wire sutures kept the parts *in situ*. Healing, by the first intention, took place; the new lid remained in its proper position; and in three weeks, the corneal ulcer had cicatrised. A few weeks subsequently, Mr. Eccles performed a similar operation for the restoration of the upper lid, the new structure being borrowed from the forehead. This wound also healed by the first intention. In about two months, the cure was complete; she could close her eye, wink, and keep it shut while asleep.

Obstructions of the Lacrymal Apparatus were not very amenable to treatment until the observations of Mr. Bowman shed new light upon the subject, and he instituted a novel mode of cure upon scientific principles. I shall not revert to the old plans of treatment, but fully describe Mr. Bowman's innovation, which, for originality and importance, claims our warm admiration and praise. Notwithstanding that this method has been in constant and successful use by myself and colleagues at the Plymouth Eye Infirmary for about two years, I consider it due to its author to convey to you his ideas on the subject pretty much in his own terms.

Mr. Bowman's first observations on his new method of curing certain cases of epiphora were published in the *Medico-Chirurgical Transactions* for 1851.

His operation consists essentially in laying open the puncta on their conjunctival aspect, slitting up the canaliculi as far as the caruncula lachrymalis, and the subsequent use of graduated probes to dilate contracted portions of the lacrymal and nasal canals. Until I read Mr. Bowman's paper, I confess that I was ignorant of the anatomical fact that the canaliculi, in their normal state, are much more capacious than the puncta, and capable of the admission of a probe of the diameter of one-twentieth of an inch, or more.

The obstruction of the drainage apparatus of the eye may exist at the puncta, in the canaliculi, at their junction with the lacrymal sac, in the sac, or in the nasal duct.

By slitting up the canaliculus, the whole extent of the lacrymal apparatus is, as it were, placed under the control of the surgeon, who, by the use of properly constructed and graduated probes, is enabled to explore and dilate any strictured parts. To slit up the canaliculus, the patient sits on a low chair, and leans his head back against the chest of the operator. If the left punctum is to be divided, the skin of the lower lid is stretched, and the punctum everted by the ring-finger of the left hand. Mr. Critchett's grooved director is inserted into the punctum, and slid along the canaliculus by the right hand. The canaliculus being now made straight and tense by the ring-finger of the left hand, a small sharp pointed or a Beer's knife is slid into the groove of the director, and the canal is slit on its conjunctival aspect quite up to the caruncle, the director being raised out of the canal on its point, to insure complete division. The incision should be direct, and not pass obliquely through the tissues, that there may be less extent of surface for union by the first intention. To avoid extent of surface, a probe should be passed along the line of incision daily for a few days, to insure patency of the canal.

Mr. Vose Solomon, who has written a short but excellent monograph on this subject, advises that the canaliculi should be divided with a pair of obtusely pointed Maunoir's scissors, with narrow and short blades. He says: "When the tissues have become thickened and indurated by inflammation, the scissors are immeasurably superior to any other instrument." It may be so; but I have always used the director and knife, and found them very efficient.

One or both puncta, if desirable, being slit up, the canals are at once probed, to ascertain whether they are of full size. For this and subsequent parts of the treatment, Mr. Bowman has constructed a set of probes, from a fine hair-probe (No. 1) to the one twentieth part of an inch in diameter (No. 6). To facilitate their introduction, the larger ones are twisted on their axes, and bent near their extremities.

As in urethral stricture, much tact and delicacy of manipulation is necessary in the examination of the lacrymal canals, to avoid laceration of their lining membrane.

The obstruction may be in the middle of the canaliculus, but more frequently at its lacrymal extremity. The canal should be well stretched as the probe passes along it. No. 6 should first be used. If it is arrested at the point where the canaliculi coalesce and join the sac, the skin near the tendo oculi is moved and even wrinkled when the probe is moved, and an elastic resistance is felt; if, on the contrary, the probe passes into the sac, and strikes its inner wall, the skin is motionless. When an obstacle is experienced, the point of the probe should be turned in various directions by rotation on its axis, at the same time urging it gently forwards. If the probe cannot be passed into the sac, Mr. Bowman employs a cannula lancet, pierces the obstruction, and at once passes a No 6 probe. Under similar circumstances, I have successfully forced the obstruction with a finely pointed silver probe; and Mr. Vose Solomon has done the same; still, if it be at hand, I much prefer the use of the cannula lancet.

The probe being in the sac, the second stage of the treatment commences. It should be raised vertically, and passed gently downwards along the nasal duct into the nose. If it does not enter readily, it should be rotated on its axis, so that the point may receive various directions, and be pushed carefully onwards. If No. 6 does not pass, No. 5 must be tried. When the probe is once fairly in the nose, it should be allowed to remain there about five minutes. The probing should be practised every second, third, or fourth day, according to circumstances, to insure a certain cure.

I could relate to you numerous cases from my own practice illustrative of this treatment, but our time is too limited for such narration. Moreover, you can read some very good cases in Mr. Vose Solomon's treatise on *Epiphora, and its Successful Treatment by the New Method of Dilatation*; and also in the *Ophthalmic Hospital Reports*.

Mr. Teale, junior, has written a short article on this subject in the *Medical Times and Gazette*, and advocates a modification in the construction of the probes, which I have not tried.

Before dismissing the subject of lacrymal obstructions, it is

right to allude to Desmarres' operation of destroying the lacrymal sac by the actual cautery, in cases of severe obstruction and abscess. The skin over the diseased sac is incised, and the exposed mucous surface destroyed by repeated applications of the actual cautery. Mr. Critchett reports favourably of this method; but it must evidently be considered a last resource, and a practice to which the proper employment of Mr. Bowman's treatment will rarely afford opportunity.

Strabismus. Division of the tendons of the recti muscles for the cure of strabismus, external and internal, has now for many years been fully appreciated by surgeons. As first practised, the operation was somewhat rude; but progress and refinement have affixed their stamp on the modern procedure. The subconjunctival method is now most usually adopted. Most operators prefer the hook and scissors; while a few, with Mr. Holthouse, use a curved knife. I advocate the former. If the conjunctival opening is made too large, the defect may be remedied by suture of its cut edges. If it is not so obviated, sinking of the caruncle, and a staring appearance of the globe, mark the eye in after life.

It is popularly reported that the cure of strabismus by operation is not permanent. For my own part, I have never seen a relapse; indeed, those patients whom I have watched have always seemed to improve in appearance from year to year.

One fact must have deeply impressed itself upon all operators; that the squinting eye, which, as regards vision, is always the most defective, becomes, after the cure of the deformity, more sensitive to light, more capable of correct vision, and more useful to the patient. Another fact has also forced itself upon me; viz., that when only one eye appears to squint, it is almost invariably necessary to operate upon both to attain a good result.

Nævi are often placed on the eyelids and their vicinity; but they are for the most part cutaneous, and present no marked peculiarity.

One very remarkable case of *venous tumour in the orbit* has occurred in my practice within the last few years, which is worthy of record. It has been already published by Mr. Walton, in the *Medico-Chirurgical Transactions;* still, it is so unique, that I should wish to relate it to you. The subject of the affection was a young lady. The tumour was in the left orbit. It consisted of a congeries of blue contorted veins, some of them as large as a crowquill, and its upper boundary was readily shewn by depressing the lower lid. The mass of veins below the under lid was evidently only the upper part of a tumour, which extended into the orbit, and probably elsewhere. The veins were emptied by pressure, and their redistension was slow. The lower lid was prominent, and of a bluish tint. The eyeball projected, was much restricted in motion, and incapable of inward rotation. The vision was much impaired. She suffered much pain in the part, as well as in the forehead and face, and especially at the menstrual period; and this, as well as a general distress, made her clamorous for relief. Some years before the period to which I now refer, she had consulted Sir Benjamin Brodie, Messrs. Lawrence, Tyrrell, and Dalrymple. At that earlier period of the case, they all advised delay. Now, at my instance, she consulted Messrs. Bowman and Walton. Both these gentlemen recommended surgical interference; and she finally placed herself under the care of Mr. Walton, who decided to inject the mass. After many experiments upon blood recently drawn, he determined to use a solution of tannic acid, as both safe and efficient. On the 14th of October, 1856, in my presence, Mr. Walton made a small opening into one of the most prominent veins, introduced the coarse nozzle of an Anel's syringe, and rapidly injected the syringeful of a saturated solution of tannic acid. Hæmorrhage ceased at once, and the tumour became solid. Severe inflammatory action, abscess with discharge of the solidified blood, and great constitutional fever, followed the operation. In three months, the abscess had healed, the eyeball had sunk to its natural level, and the tumour was destroyed.

I saw this young lady about a week since. The ocular movements are still very restricted, and all vision is extinct. Still, the cure of a rapidly growing venous mass in a dangerous locality is complete, and the patient well satisfied with the result. I conceive that similar tumours, situated in other parts of the body, might be successfully treated by this plan, if from circumstances excision or other operations were unsuitable.

Incised Wounds of the Cornea. The treatment of incised wounds of the cornea has of late years been much modified. Formerly, leeches, fomentations, lotions, purgatives, and other medicines were in use. At the present time, simple corneal wounds are treated on the same principles as cutaneous incisions. If the wound is smooth and even, and uncomplicated by prolapse of the iris, the eye should at once be placed in repose by approximation of the lids, and strapping them together with small strips of adhesive plaster, very slight pressure being exerted upon the globe. If there is prolapse of the iris, it should be replaced with a small smooth silver probe; and, if this cannot be accomplished, an attempt should be made to withdraw it by the action of atropia or belladonna. If reduction is attained, the eye should be strapped, as before advised, but if not, even then the lids should be closed and strapped, and belladonna smeared around the eye at frequent intervals.

This mode of treatment has been ably brought before the profession by Mr. Dixon; and, as I have often tested its value, and been gratified by its success, I beg to urge it upon your attention and adoption.

Foreign Bodies in the Eye. The eye is subject to various and frequent injury from the presence of foreign bodies, which demand immediate removal; but the necessary operative procedures are as numerous and varied as the cases presented to us. About two years ago, I was consulted in a case of great interest, which I will briefly relate.

Case. A very fine boy, two years old, was brought to me from Cornwall. For six weeks he had suffered from severe inflammation of one eye, which his surgeon thought to arise from teething. The eyelids were prominent, swollen, and reddish, and between them distilled a copious muco-purulent discharge. It was impossible to get a glimpse of the cornea, in consequence of solid œdema of the upper lid. He suffered excessive pain, but otherwise was in good health. The opposite eye was quite healthy. I at once conjectured that some foreign body was lodged under the upper lid, but his parents could give no information on the point. I passed a probe enveloped in fine lint between the upper lid and globe of the eye, and swept it between them; on the second execution of this manœuvre, a piece of the beard of a barley-corn an inch long was extracted. In a few days the cornea was visible; on its upper and central portion was a white opacity. In a few months this disappeared, and the functions of the eye were perfect.

Sympathetic Ophthalmia. When, as the result of injury, the vision of one eye has been destroyed, it is by no means a rare occurrence for the sound eye to sympathise with the injured one, and to take on morbid action; which, sooner or later, is destructive of its organisation. This secondary affection is termed sympathetic ophthalmia. It is little amenable to treatment, is rarely arrested by ordinary remedies, and, if not acted upon by the removal of the exciting cause, rarely fails to destroy vision. Did not anatomy disclose the decussation of the optic nerves, this sympathetic relationship would appear extraordinary; but a knowledge of that fact at once dissipates surprise, and prepares us to recognise the results which actually occur. This destructive inflammatory state is sometimes acute and rapid, at others slow and intermitting; but, in each instance, certain in eventual disorganisation.

The acute form commences with supraorbital pain, more or less severe; vascularity of the conjunctiva and sclerotic; alterations in structure and colour of the iris; deposit in the pupillary aperture, with adhesions to the capsule of the lens; bulging forward of the iris; loss of sensibility of the retina; and atrophy of the globe.

The chronic variety is more insidious, but equally destructive of the organ. There is less pain, especially at first. Vision is more slowly destroyed; and this usually commences with dimness or mistiness of sight, with or without muscæ. The pupil becomes sluggish, and its margin fringed with patches of lymph, which soon form adhesions. Treatment, or abstraction of the ordinary causes of disease, in this stage, effects improvement; intermissions occur; but the lull is fallacious, the morbid process is resumed, increases in severity, and with more or less rapidity disorganisation ensues, leaving the eye glaucomatous.

The British Medical Journal for October 1854, contains a short but important paper by Mr. Prichard of Bristol, on "Injuries of the Eye, and Extirpation of the Globe". He says:—"I believe that when chronic internal inflammation attacks the second eye, after an injury to the first, the proper plan of treatment is to remove the remains of the injured organ." This sentence contains the first proposition of excision of the globe for sympathetic ophthalmia, upon which the seal of approbation has been affixed by many subsequent observers.

The operation is now recognised by a large number of surgeons as the most appropriate and adequate method of meeting the sympathetic disease which I have described. The operation in use is essentially that which was proposed by Dr. Fer-

rall of Dublin, in 1841, and may properly be called enucleation of the globe.

It is usually performed in the following manner. The patient is well chloroformed. The lids are held asunder by the spring wire speculum. The conjunctiva is divided circularly near its reflection with a pair of short-bladed, lancet-edged, straight scissors. The ocular fascia is next cut through, and the muscles exposed. The strabismus-hook is slid under the various tendons, which are conveniently divided in the following order. First: the rectus externus, and in succession, the rectus superior, inferior, and internus. The globe starts forwards, and the obliqui are cut. The forefinger is now slid along the outside of the globe as far as the nerve, which is divided with a pair of blunt-pointed, laterally curved scissors. Bleeding is restrained by syringing the cavity with cold water. In a few days, cicatrisation of the stump formed by the ends of the muscles, and the conjunctiva is complete, and an artificial eye is adapted with good cosmetic effect.

Mr. Critchett varies the operation, and uses only a sharp and blunt-pointed pair of scissors, and without the aid of the hook performs it very rapidly. If not resorted to very late, this proceeding is, in most instances, followed by cure, or by a very essential improvement in the eye sympathetically affected.

Enucleation of the globe is also advisable in certain scrofulous or malignant diseases of the organ, and also in painful conditions of the globe or disorganisation of its structure.

I here show you the eye of a child, aged three years, which I removed, after the plan described to you, on the 28th day of April last. The history of this case is interesting.

Case. Fanny Love, aged 3½, of fair complexion and healthy aspect, the child of healthy parents, without scrofulous or syphilitic taint, has had a slight squint in the right eye for more than twelve months. Six months since she had measles. About a month after this, her parents saw a white spot behind the pupil of the right eye, and thought her vision imperfect. Soon after this, I saw her. I found the eye normal in size and in consistence. Vision was lost; the iris acted sluggishly; there was no pain. The pupil being fully dilated by atropia, a large white flocculent oscillating mass was seen at the fundus of the eye; it had an irregular surface, and here and there was stained by slight sanguineous effusions. It appeared to occupy a large portion of the vitreous space. The little patient would not tolerate the use of the ophthalmoscope. Seven weeks after this examination, the flocculent mass was found to be much larger, and the effusion of blood more evident. The anterior chamber was nearly obliterated by the bulging forwards of the iris. The lens was still transparent. Enucleation of the globe was performed on the 28th day of April, 1860. No trouble followed the operation; and the child was not confined upstairs a single day.

Dr. Bader, who very kindly examined the eye microscopically and chemically, said that he had never seen a similar disease. The account of his examination is most learned and elaborate; but for our purpose, it is sufficient to state that he found the vitreous space occupied by a creamy whitish opaque semifluid substance, which could be removed in flakes. The whitish appearance depended upon the presence of carbonate of lime in considerable quantities.

I here show you two eyes, also removed at the Plymouth Eye Infirmary. There was nothing very unusual in the cases; but I exhibit them, that you may see how free from raggedness the surface of the globe of the eye is when removed in the manner described; and I would observe, that these specimens have not been trimmed since their removal.

[*To be continued.*]

A Precocious Mother. There was one case during the year worthy of especial notice, in consequence of the extreme youth of the mother. Elizabeth D. was born of native parents, in the almshouse at Taunton, United States, May 24th, 1847, and at the same place she became the mother of a healthy boy, on the first day of February, 1858, being only *ten years eight months and seven days old.* This appears to be a rare case in this climate, but is well attested by the physician (Dr. A. Baylies) of the almshouse at Taunton, who officiated professionally both at the birth of the young mother, and at that of her "hopeful son". This boy weighed eight pounds at birth, and at the age of eighteen months it weighed 37½ pounds, and was in the enjoyment of robust health. (*Massachusetts Registration Report*, and *American Medical Times.*)

A Course of Lectures
ON
URINE, URINARY DEPOSITS, AND CALCULI.

DELIVERED AT THE PATHOLOGICAL LABORATORY, DURING THE SESSION 1857-58.

BY
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Lecture VII.

Urine in Disease. *Insoluble Substances in Urine.* 1. *Floating on the Surface, or suspended through the Fluid.* Urinary Deposits. 2. *Light and Flocculent Deposits.* 3. *Dense and Opaque Deposits.* 4. *Granular and Crystalline Deposits.* Examination and Preservation of Urinary Deposits. *Collecting Urine for Microscopical Examination. Period when the Urine should be examined. Removal of the Deposit from the Vessel containing it. Of Collecting a very small quantity of a Deposit from a Fluid. Magnifying Powers required in the Examination of Urine. Of the Chemical Examination of Urinary Deposits. Examination of the Deposit in the Microscope. Of Placing the Deposit in the Preservative Fluid. Refractive Power of the Medium in which Deposits are mounted. Media in which Urinary Deposits may be preserved. Of Keeping the Deposit for subsequent Inquiries. Of Preserving Deposits permanently. Mucus, Epithelium, Fungi, and Vegetable Growths. Spermatozoa. Casts. Pus. Phosphates, Urates, Blood-Corpuscles, Uric Acid, Cystine, Oxalate of Lime. On Preserving Crystalline Substances which are more or less Soluble in Water.* Of Extraneous Matters of Accidental Presence. *Larvæ of the Blow-fly. Hair. Cotton and Flax Fibres. Portions of Feathers. Silk. Fibres of Deal from the Floor. Starch-Granules. Portions of Tea-Leaves. Milk. Sputum. Epithelium from the Mouth. Vomit.*

Gentlemen,—We now come to the examination of the different insoluble substances which are often met with in the urine in cases of disease. You may remember that I mentioned that in healthy urine only a very little insoluble material, in the the form of a faint flocculent cloud, was to be detected. This consists of granular matter, probably composed of epithelial *débris*, and imperfectly formed cells of epithelium derived from some part of the genito-urinary mucous membrane. This is what is ordinarily termed the *mucus* present in healthy urine, and may be greatly increased in quantity in certain diseases of the mucous membrane.

It will be convenient, for the purposes of description, to arrange these insoluble substances in a certain order; and I think that the subdivision which I shall recommend to your notice will be found of some practical value when you are trying to discover the nature of different insoluble substances. It is not my endeavour to devise a natural classification, but merely to arrange deposits in the order in which they can be practically treated of most conveniently. There are objections to this, as to every other subdivision; but, as it is simple, and depends merely upon the general characters which you can observe by the unaided eye, I venture to recommend it to you.

Insoluble substances may float on the surface of the urine, or may be diffused throughout the fluid, or they may sink to the bottom, forming *deposits* of greater or less density.

1. *Insoluble Matter floating upon the Surface of Urine, or diffused through the Fluid.* Fatty matter in a very minute state of division, as it occurs in cases of *chylous urine*, is one of the most important substances contained under this head; and, in alluding to this form of fatty matter, it will be convenient to direct your attention at the same time to all the different states in which fatty matter is found in the secretion, *dissolved by* other constituents; in a *molecular* or *minutely divided state*; in the form of *globules*, which may be *free*, contained in *casts*, or within *cells* constituting fat-cells; or in the form of small *concretions*, as described under the term *urostealith* by Heller, but only in one single case.

Urate of soda is another substance which is often suspended

in a molecular state through the fluid, rendering it turbid; but this also forms a deposit, and it will therefore be more convenient to consider it under that head. Phosphates are found not unfrequently in the pellicle upon the surface of urine; but in this case they are merely buoyed up, as it were. We shall have to consider this salt also under urinary deposits.

2. *Light and flocculent Deposits, usually transparent, and occupying considerable volume.* Under this head I shall include mucus, with different forms of epithelium derived from the kidney, ureter, bladder, urethra, vagina, etc.; certain well defined forms of fungi and vibriones; sarcinæ; spermatozoa; casts of the uriniferous tubes; rarely, benzoic acid in small quantity.

3. *Dense and opaque Deposits, occupying considerable bulk.* This class will include only deposits of urates, pus, and phosphates.

4. *Granular or crystalline Deposits*, occupying a small bulk, sinking to the bottom, or deposited upon the sides of the vessel. This division includes a great many different substances. Among the most important are uric acid, oxalate of lime, certain forms of triple phosphate and phosphate of lime, cystine, carbonate of lime, blood-corpuscles, and very rarely, cancer-cells, tubercle-corpuscles, and echinococci.

The examination of urinary deposits is now a subject of such great importance, and the advantages derived from it are so generally admitted, that I need scarcely refer to its value, in assisting us to form a diagnosis in many cases of disease. Within the last fifteen or twenty years, the investigation of urinary deposits has been so much simplified by the conjoint use of the microscope and chemical analysis, that the nature of the greater number of deposits has been correctly ascertained. When you commence examinations of urinary deposits for the first time, you will doubtless meet with many difficulties; and in some specimens which you examine you will perhaps discover no deposit whatever; whilst in examining others, the whole field of the microscope is seen to be occupied by substances of various shapes and colours, the nature of which you will be unable to ascertain. Many of the substances which lead to this difficulty have obtained entrance into the urine accidentally; and I must therefore warn you against mistakes easily made, which are serious, and may bring great discredit upon your powers of observation. Portions of hair have been mistaken for casts of the renal tubes; starch-granules for cells; and other substances of extraneous origin, such as small portions of woody fibre, pieces of feathers, wool, cotton, etc., often take the form of some of the urinary deposits, and to a certain extent resemble the drawings given of them in their general appearance, so as to mislead the student in his inferences, and retard his progress in investigation.

Collecting Urine for Microscopical Examination. Urine, which is to be submitted to examination, should be collected in considerable quantity, in order to obtain sufficient of the *deposit* for examination. In many instances, the amount of sediment, even from a pint of urine, is so small that, without great care in collecting, it may be altogether passed over. The amount of deposit from a measured quantity of urine should always be roughly noted. The space occupied by the deposit may be compared with the total bulk of the fluid, and we may say the deposit occupies a fifth, a fourth, half the bulk of the urine, etc.

Bottles used for carrying specimens of urine should be made of white glass, with tolerably wide mouths, and capable of holding at least four ounces; but, if the sediment only of the urine is required, the clear supernatant fluid may be poured off, after the urine has been allowed to stand for several hours, and the remaining deposit may then be poured into small bottles of an ounce capacity, or even less. The only objection to this latter mode of collecting urine is, that no estimate of the *amount* of sediment deposited by a given quantity of urine can be formed. The bottles may be arranged in a case capable of containing two, four, or six. They may be obtained of Messrs. Weiss, in the Strand; Mr. Matthews, near King's College Hospital; and other instrument makers.

Period when the Urine should be Examined. In all cases the urine should, if possible, be examined within a few hours after its secretion; and, in many instances, it is important to institute a second examination after it has been allowed to stand for twenty-four hours or longer. Some specimens of urine pass into decomposition within a very short time after they have escaped from the bladder; or the urine may even be drawn from the bladder actually decomposed. Under these circumstances, we should expect to find the secretion highly alkaline, having a strongly ammoniacal odour, and containing crystals of triple phosphate, with granules of earthy phosphate; and upon carefully focussing, numerous vibriones may generally be observed. In other instances, the urine does not appear to undergo decomposition for a considerable period, and may be found clear, and without any deposit, even for weeks after it has been passed.

In those cases in which *uric acid* or *oxalate of lime* are present, you will find that the deposit increases in quantity after the urine has stood for some time. These salts are frequently not discoverable in urine immediately after it is passed, but make their appearance in the course of a few hours. The deposition of uric acid depends upon a kind of acid fermentation, which has been the subject of some beautiful investigations by Scherer.

In order to obtain sufficient of the deposit from a specimen of urine for microscopical examination, we must place a certain quantity of the fluid in a conical glass (Lecture I); in which it must be permitted to remain for a sufficient time to allow the deposit to subside into the lower part.

Removal of the Deposit from the Vessel containing it. In order to remove the deposit from the lower part of the vessel in which it has subsided, I firmly close the upper end of the pipette with the forefinger, the tube being held by the thumb and middle finger. Next, I plunge the lower extremity down to the bottom of the deposit. The forefinger may now be raised very slightly, but not completely removed, and a few drops of the fluid with the deposit slowly pass up into the tube. When a sufficient quantity for examination has entered, I press the forefinger again firmly upon the upper opening, and carefully remove the pipette. A certain quantity of the deposit is now allowed to flow from the pipette on to the glass-slide or cell, by gently raising the forefinger from the top. It is then covered with the thin glass cover, and subjected to examination in the usual way. Dr. Venables recommends that the deposit should be obtained by inverting a corked tube into which the urine has been previously poured. A small quantity of the deposit adheres to the cork, and may be removed to a glass-slide; but, as a general rule, I think the plan above described will be found efficient.

Of Collecting a very small quantity of a Deposit from a Fluid. When the quantity of deposit is very small, the following plan will be found of practical utility. After allowing the lower part of the fluid which has been standing to flow into the pipette, as above described, and removing it in the usual manner, the finger is applied to the opening, in order to prevent the escape of fluid when the upper orifice is opened by the removal of the finger. The upper opening is then carefully closed with a piece of cork. Upon now removing the finger from the lower orifice, the fluid will not run out. A glass-slide is placed under the pipette, which is allowed to rest upon it for a short time. It may be suspended with a piece of string, or supported by the little retort stand. Any traces of deposit will subside to the lower part of the fluid, and must of necessity be collected in a small drop upon the glass-slide, which may be removed and examined in the usual way.

Another plan is to place the fluid, with the deposit removed by the pipette, in a narrow tube, closed at one end, the bore of which is rather less than a quarter of an inch in diameter. This may be inverted on a glass-slide, and kept in this position with a broad elastic India-rubber band. The deposit, with a drop or two of fluid, will fall upon the slide, but the escape of a further quantity of fluid is prevented by the nature of the arrangement.

Magnifying Powers required in the Examination of the Urine. Urinary deposits often require to be examined with different magnifying powers; those which are most frequently used being the inch and the quarter of an inch. The former magnifies about 40 diameters (×40); the latter from 200 to 220 (×200, ×220). Large crystals of uric acid are often readily distinguished by the former, but crystals of this substance are sometimes so minute that it is absolutely necessary to use high powers. Octohedra of oxalate of lime are frequently so small that they cannot be seen with any power lower than a quarter; and, in order to bring out the form of the crystals, even higher object-glasses than this are sometimes necessary. Spermatozoa may be seen with a quarter, but they then appear very minute. In these cases, an eighth of an inch object-glass, which magnifies about 400 diameters (×400), will be of advantage. The casts of the tubes, epithelium, and the great majority of urinary deposits, can, however, be very satisfactorily demonstrated with a quarter of an inch object-glass.

You will often learn much by subjecting a deposit, the nature of which is doubtful, to examination in various fluids, such as water, spirit, mucilage, turpentine, Canada balsam, etc.

Of the Chemical Examination of Urinary Deposits. In the investigation of those deposits which are prone to assume very various and widely different forms, such as uric acid, it will sometimes be necessary to apply some simple chemical tests, before the nature of the substance under examination can be positively ascertained.

Suppose, for instance, a deposit which is found, upon microscopical examination, not to possess any characteristic form, be suspected to consist of uric acid, or of an alkaline urate, we have only to add a drop of solution of potash, which would dissolve it, and then excess of acetic acid, when the crystals of uric acid will be deposited after some time in their well known rhomboidal form; or any other chemical tests which should be considered necessary may be applied.

When it is requisite to resort to chemical reagents, a drop of the test-solution is to be added to the deposit, which is placed in the cell, or upon the glass-slide. If necessary, heat may be applied to the slip of glass by a spirit-lamp, and, with a little practice, the student will soon be able to perform a qualitative analysis of a few drops of urine, or of a very small portion of a deposit.

Examination of the Deposit in the Microscope. The drop of urine with the deposit is to be placed in a thin glass cell, or in one of the animalcule-cages sold by Messrs. Powell and Lealand, of the Euston Road. The latter instrument will be found convenient for examining urinary deposits, as a stratum of fluid of any degree of thickness can be very readily obtained.

Various parts of the specimen are to be brought into the field of the microscope. It is better to examine the object as regularly as possible, commencing on one side, and moving it up and down, until the whole has been traversed. After one specimen has been examined, and the nature of its contents noted, another may be treated in a similar manner. Specimens should be taken from the deposit at different levels, for while some deposits soon sink to the bottom, others are buoyed up, as it were, either by the small quantity of mucus which the urine contains, as is the case with small crystals of oxalate of lime, or by the flocculent nature of the deposit itself.

As each part of the deposit is brought under the field of the microscope, you should endeavour to recognise every object as its passes under view. This, however, will for some time be found a matter of considerable difficulty, arising partly from the great number of deposits which commonly occur together, and partly from the very various forms which many of these substances are liable to assume, but chiefly, I believe, from the great number of substances of accidental presence which are found in almost every specimen of urine subjected to examination; especially in urine obtained from the wards of a hospital, upon which the first microscopical observations are usually made.

[*To be continued.*]

Disparity of the Sexes in Victoria. Some remarkable facts respecting the disparity of sexes in this colony are disclosed in the Census of 1857. Sir Henry Barkly, the Governor, in noticing these facts, says in a despatch:—"It now appears that though considerable improvement in this respect took place between 1854 and 1857, yet that the effective disproportion at the latter period was far more serious than would be deducible from the fact of there being 163 males to every 100 females in the entire population. Since tabling the portion of it above the age of 20 years, there were no less than 217 males to that number, the proportions below that age being pretty nearly equal. There were 88,355 unmarried men of 20 years of age and upwards to 12,545 unmarried women of corresponding ages; or, to raise the age of marriage for men to 21, and lower it to 15 for women, there was still an excess of 61,859 bachelors, not to add 5,112 widowers. Even this comparison, however, fails to convey a full sense of the evil as it affects the goldfields, where it appears that the percentage of unmarried men is, to that to be found in the seaport towns, as 61 to 39; or, to state the case in another form, where the bachelors are to the spinsters in the proportion of more than 20 to 1. There are, moreover, 8,096 married men chiefly in the mining districts whose wives are not in the colony. Only 9 per cent. of the women on the goldfields above 20 are unmarried; while in Great Britain the proportion who marry under that age is only 2¼ per cent., 30 per cent. of the girls between 15 and 20 are here married."

Illustrations of HOSPITAL PRACTICE:

METROPOLITAN AND PROVINCIAL.

HULL GENERAL INFIRMARY.

CASES OF TETANUS.

[*Reported, with Remarks, by* C. J. Evans, Esq., *House-Surgeon.*]

Case I. *Idiopathic Tetanus: Recovery.* (Under the care of O. Daly, M.D.) William Roberts, aged 20, by occupation a groom, was admitted under the care of Dr. Daly, on March 1st, 1860, labouring under symptoms of tetanus. He had suffered for about three weeks from a pretty severe pain under the right breast. Twelve days before admission, he got wet, and remained in that state all day; before which he had been quite well, with the exception of the pain above mentioned. He attended at the Dispensary; and the pain left his chest, and became located in his back and loins; it had since then been gradually extending itself all over him, but was especially severe in the abdomen. A week ago, he found that he could not open his mouth as usual.

On admission, he could just open his mouth sufficiently to protrude his tongue, which was thickly covered with a white fur. His bowels, he said, were moved once daily, but not without castor oil. The abdomen was hard and compressed; the muscles of the neck, legs, and thighs, were rigid, but the extremities less so; those of the arms were natural. Every few moments, a sudden pain attacked him in the back, and passed to the abdomen, making him start. The pulse was 100, of moderate volume; the breath fœtid. He was easiest when sitting up in bed and leaning forward. He was ordered to have five grains of Dover's powder every two hours, an ounce and a half of citrate of potash mixture three times a day, and a diet of milk and arrowroot.

March 2nd. He passed a tolerable night. The bowels were not open.

℞ Pilul. coloc. comp. ʒj; olei crotonis ♏ij. M. Fiant pilul. xij quarum sumat ij statim et repetat horâ somni.

The powders and mixture were continued, and beef-tea was ordered.

March 3rd. The bowels were well opened after the pills. A linseed-meal poultice was ordered to be applied under the lower jaw.

March 5th. He was in some respects a little better. The tongue was less furred, and the abdomen less rigid. The croton-oil pills were ordered to be repeated, as his bowels were inclined to be costive.

March 10th. The abdomen was much less rigid, and the muscles of the neck also. He could protrude his tongue much further. He had never had, nor had he now, any difficulty in deglutition. Pulse 78. He was ordered to take the powders every four hours.

March 15th. He was gradually improving. The abdomen was becoming quite soft. He continued to take the purgative pills occasionally. He was ordered to have ammonia liniment rubbed into the neck night and morning.

He subsequently had a warm bath several times, and was discharged cured on April 2nd.

Case II. *Lacerated Wound of Hand, with Fracture: Tetanus on the tenth day, and Death on the fifth day after.* (Under the care of R. M. Craven, Esq.) T. Fenwick, aged 62, married, a very free liver, was admitted under the care of Mr. Craven on Sept. 8th, 1859, having met with an accident to his hand from machinery the previous day, and bringing with him the following account of the injury, kindly sent by Mr. Jackson, surgeon, of Welton, under whose care he first came. "The carpus and metacarpus have been very severely fractured, and the integument has been much torn. The radial artery has been torn through, which I have only been able to secure at the upper end; but little bleeding has taken place from its lower end. . . . . I have removed several portions of loose bone, and brought together the integuments of the lower arm and wrist. The tendons, etc., were completely exposed. . . . . The thumb and fingers are quite warm to-night, notwithstanding the loss of the radial artery."

On admission, there was no hæmorrhage; and the hand was

comfortable, all the fingers being warm and sensitive. He was ordered to have forty minims of laudanum at bedtime. Water dressing was applied, and beef-tea was ordered.

Sept. 11th. There was some sloughing of the integument on the dorsum of the hand, the tendons becoming exposed. He complained of feeling poorly; he was feverish, with furred tongue. An aperient draught was given; and a saline draught was ordered to be taken every four hours.

Sept. 15th. The water dressing was changed for a linseed poultice. The aperient draught was repeated.

Sept. 17th. To-day (the tenth from the day of the accident), while having his dinner, he complained of not being able to open his mouth so well as usual. There was some stiffness of the jaws. The pupils were a little contracted. He had no pain nor starting of the hand. The tongue was rather furred; the pulse 81, soft. He was ordered to take immediately a powder of eight grains of calomel and a scruple of jalap, and to repeat it in the morning. A turpentine enema was also ordered.

Sept. 18th. He passed a very fair night. The bowels were relieved once only. He could not open his jaws so wide, and refused his beef-tea. Pulse 100.

Vespere. The teeth were now almost closed. The pulse was rather small. He was ordered to have forty minims of liquor opii sedativus immediately, and six ounces of wine.

Sept. 19th. The dorsum of the hand looked sloughy. Yeast was ordered to be smeared upon the poultice.

Vespere. The jaws were completely closed, and he had great difficulty in deglutition. There was some tension of the abdominal muscles. Pulse 110, feeble. He was ordered to take as much wine as could be got down. The turpentine enema and the anodyne draught at bedtime were repeated.

Sept. 20th. He had a better night, but there was no remission of the symptoms. There had been no action of the bowels, and the difficulty of deglutition had increased. Five grains of calomel were ordered to be placed on the tongue; the sedative draught to be taken every night; and an enema of strong beef-tea and brandy to be administered three times a day.

Sept 21st. There was some slight tendency to opisthotonos. The sphincter ani was tightly contracted. Pulse 108, small and feeble. At 8 P.M., he had a violent spasm of the respiratory muscles. The pulse became gradually imperceptible, and he died in a convulsion, at 4 A.M.

There was no autopsy.

CASES OF CHOREA.

Case I. *Chorea depending on Pregnancy.* (Under the care of O. Daly, M.D.) Sarah Dalton, aged 18, married, a stout healthy looking woman, of florid complexion, was admitted under the care of Dr. Daly, on March 18th, 1858, suffering from strongly marked symptoms of chorea. She had been married four months, and the affection commenced about a month after marriage, just at the menstrual period. Her health had been previously very good. She had been under treatment throughout, and, a short time before admission, was very violent, requiring several persons to hold her in bed; but since then she became more quiet. She had menstruated once since her marriage, and had some of the symptoms of pregnancy. She was ordered to have two calomel and colocynth pills at bedtime, and a senna draught in the morning; and to have fifteen minims of tincture of sesquichloride of iron in water three times a day.

March 22nd. She was very restless at night; otherwise she had somewhat improved. Two grains of sulphate of zinc and a quarter of a grain of hydrochlorate of morphia were prescribed to be taken in a pill every night, and an ounce and a half of compound decoction of aloes every morning. Full diet was allowed.

March 24th. She slept better, and expressed herself as feeling altogether better. She was ordered to have a shower-bath three times a week, and half a pint of porter daily.

March 29th. There was much improvement in every respect, and the same treatment was ordered to be continued.

April 8th. The patient left the hospital to-day, at her urgent request. The note of this date says: "She has improved most rapidly. On her admission, her gait was most unsteady, and she answered questions shortly and abruptly; now she walks well, and converses without difficulty."

She was admitted again on Sept. 8th, 1859, under the care of Sir H. Cooper, with a return of the choreic symptoms, which, however, were not so strongly marked as on the previous occasion. She had been quite free from them since she left the hospital in April 1858 (seventeen months), till within about five weeks. She had a child a year old, which she only weaned a fortnight before admission. She menstruated regularly during lactation up to the last two months, and she believed herself to be pregnant again. She was ordered to have two calomel and colocynth pills every night at bedtime; and eight grains of tartrate of iron, in camphor mixture, three times a day.

Sept. 17th. She was steadily improving under the above treatment.

Sept. 29th. She was made an out-patient to-day, at her own request; and took, while out, the tincture of sesquichloride of iron; and was discharged cured on November 1st.

Remarks. The symptoms of this patient yielded speedily to treatment, as on the previous occasion. They were evidently connected with uterine irritation, and seemed to depend upon the condition of early pregnancy.

Case II. *Chorea.* (Under the care of H. Sandwith, M.D.) Elizabeth Hutton, aged 13, was admitted under the care of Dr. Sandwith on April 15th, 1858, with symptoms of chorea. It was a first attack, and had commenced about two months before, when her mother first noticed her to have fidgety movements of the hands. She had had no medical treatment. She was ordered to have two grains of calomel at bedtime, and an aperient draught in the morning; and to take eight grains of citrate of iron in mint water three times a day.

April 16th. She was ordered to have a shower-bath every morning.

May 5th. She had improved under the above treatment until the last week or so, during which time there had been a slight relapse; her movements were again fidgety, and her gait unsteady. She was ordered to take ten grains of sesquicarbonate of iron in treacle three times a day, and to continue the shower-baths.

June 8th. Very great improvement in all the symptoms had taken place.

June 12th. A smart attack of erysipelas of the face now showed itself, but subsided rapidly under simple treatment. On its disappearance, the choreic symptoms still remained in abeyance, and the girl was discharged well on July 1st.

Case III. *Severe Case of Chorea, ending fatally; Autopsy.* (Under the care of O. Daly, M.D.) Anne Beale, aged 15, a well developed girl, but who had never menstruated, was admitted under the care of Dr. Daly on April 8th, 1858, with strongly marked symptoms of chorea. They commenced about three weeks ago, and had been gradually getting worse. She had a severe attack of erysipelas of the face four months since, and previously to that had suffered from low fever. There was no history of rheumatism, and the heart's sounds were natural. The patient herself said that her father had ill treated her, but her mother denied the truth of the statement. Her sister allowed, however, that he beat her once or twice before he discovered that her actions were due to her disease, and not to her own moral conduct. She was in an incessant state of motion, throwing her arms and legs about, and the bedclothes off her. She was ordered to take three grains of calomel and a scruple of compound jalap powder immediately, and to have a fourth of a grain of hydrochlorate of morphia at bedtime.

April 9th. She passed a very restless night, getting no sleep. There was no action of the bowels. Five grains of calomel, and half a drachm of compound jalap powder, were given. Some croton-oil was afterwards placed on the back of the tongue with a feather.

Vespere. She was in a great state of excitement, though not so violent as in the morning. The bowels were still unrelieved. She was ordered to have, immediately, a turpentine enema, with an ounce of tincture of assafœtida; and a cold douche.

April 10th. The bowels were relieved once. She dozed at intervals during the night, the rest of the time being very restless. The tongue was very foul. She was ordered four ounces of wine. The enema was repeated, and brought away some scybala.

℞ Potassii bromidi ʒss; tincturæ hyoscyami ʒiij; liquor. ammon. acetat. ʒiij; mist. camphoræ ad ʒviij. M. Fiat mistura cujus capiat ʒj tertiâ quâque horâ.

April 11th. Some improvement had taken place; she only woke twice in the night, and was much quieter this morning. The bowels were freely relieved; the tongue was cleaner; and she took her medicine more readily.

April 13th. Her nights were more restless again. Her neck, chest, and back were covered with a rash, apparently the result of the friction by her hands, and her constant movements.

℞ Zinci sulphatis gr. ij; ferri sulphatis gr. i; morphiæ hydrochloratis gr. ¼. M. Fiat pilula omni nocte sumenda.

The calomel and jalap powder was repeated.

April 16th. The last two or three days the disease appeared to have made more progress. Her restlessness continued by day; but she slept tolerably at night. The bowels acted about twice daily. The expression of countenance was dejected; the eyes were sunken, with dark areolæ; and she had lost her plumpness. There was a tendency to sordes about the mouth; and the pulse was feeble. Her fingers were frequently clenched in upon the palms of her hands. As much wine was directed to be given as could be got down. She was ordered to have, twice a day, a pill containing three grains of blue pill and two grains of extract of conium.

April 20th. She was much weaker; she kept moaning when awake, but lay quiet, simply from exhaustion. A low congestive pneumonia had set in; the pupils were dilated; the lips covered with sordes.

℞ Ammoniæ sesquicarbon. ℈ij; ætheris chlorici ʒj; infusi senegæ Oss. M. Fiat mistura cujus capiat ʒj 3tiis horis.

Turpentine stupes were ordered to be applied to the chest, both before and behind. She gradually sank, and died at two o'clock the next morning.

Autopsy, twelve hours after death. *Head.* The dura mater was strongly adherent to the calvarium, along the course of the sagittal suture, also to the brain beneath, along the mesial line. Here, also, there were small patches of whitish matter, looking like a deposit of lymph, but which, when examined by the microscope, appeared to be of a tuberculous nature. The puncta vasculosa were numerous; very little fluid was found in the ventricles. The rest of the brain appeared healthy.

Chest. Both lungs very much congested, and adherent to the walls of the chest posteriorly, so that, on removing them, some small portions were torn off. Bloody serum exuded copiously on pressure. The heart was healthy, with the exception of two small warty vegetations on the edge of one of the cusps of the mitral valve, which were easily separated. The uterus was natural; the ovaries were large and vascular. The spine was not examined.

Case iv. *Severe Case of Chorea, ending fatally.* (Under the care of H. Sandwith, M.D.) Joseph Longman, aged 19, was admitted on February 21st, 1859, with symptoms of chorea of a very severe nature. He had been rather badly off lately. The violent symptoms had been present three or four days; but he was first noticed to have unsteady, fidgety movements about three weeks before admission. He was ordered to have four grains of calomel immediately, to be followed by an ounce of castor-oil. Towards evening, he became so violent that it required the assistance of two men to keep him in bed. He frequently made use of the name of "Jesus", "Heaven", and such like expressions. It appeared that he was a regular attendant at a dissenting chapel. He was ordered to have an enema containing turpentine and castor-oil, and to take, every three or four hours, one eighth of a mixture containing two drachms and a half of tincture of sesquichloride of iron, and two drachms of solution of hydrochlorate of morphia. He was made to inhale the vapour of chloroform, at intervals, which quieted the spasmodic movements, and procured him some sleep.

Feb. 22nd. He passed a restless night. The same treatment was continued through the day, with the effect of keeping him much quieter, he being somewhat under the influence of the morphine. A copious dark stool was passed, after the injection.

Vespere. He was ordered to have ten grains of calomel immediately; and to take, every four hours, three tablespoonfuls of an eight-ounce mixture, containing ten drachms of spirits of turpentine and an ounce and a half of castor-oil, in peppermint water. The purgative enema was repeated. The morphine, steel, and inhalation of chloroform were ordered to be omitted. He was also ordered to have a mild tepid shower-bath in the morning.

Feb. 23rd. He slept occasionally, for ten minutes or so together, at intervals during the night, but the rest of the time he was very violent. There was the greatest difficulty in getting his medicine down, and he asked to have more of the "scent". The conjunctivæ were congested, and he said, when asked, that he had pain in the head. Pulse 100. Three leeches were applied to each temple; and he was ordered to have a compound senna draught immediately, and a turpentine enema in the evening. The shower-bath was ordered to be repeated in the morning.

Feb. 24th. The inhalation of chloroform was resumed at intervals during the night; when not under its influence, he was very violent, and was so much so this morning that it was necessary to put a strait-waistcoat on him, to prevent him from injuring himself. He was ordered to have half a drachm of carbonate of iron in treacle, three times a day. The bowels were open well during the day. He continued violent till the afternoon, when he became worse rather suddenly, and died at nine in the evening.

A *post mortem* examination could not be obtained.

It was afterwards reported that he had received a wound of the hand a week or so before admission, though it could not satisfactorily be made out. He never complained of it, nor was it mentioned at all by himself or his friends while he was in the infirmary. The date of the commencement of the symptoms, and of the receipt of the supposed injury, were not consistent, and the former did not partake of the characters of tetanus.

Original Communications.

THE ALCOHOLIC TREATMENT IN EXHAUSTING DISEASES.

By John Pursell, M.D., Brighton.

In a former communication, I endeavoured to prove the utility and efficacy of administering cordials (that is, diluted alcohol) in extreme cases of exhausting diseases, where usually the inflammatory action or congestion had been of the passive or asthenic character, and had attacked some vital organ, and terminates by inducing complete prostration of the physical and vital energies of the patient.

I propose to consider now the auxiliary agency of cordials, in conjunction with appropriate medical treatment, in subacute and chronic disease; maintaining that from the artificial habits of society, recovery, in the cases I am about to detail, would be, if not actually impossible, at least very improbable, independently of such agency.

Case i. A. B., a commercial traveller, aged 27, was placed under my medical care about fifteen years since. He was the subject of general dropsy of some months duration, for which he had submitted to treatment for three months at the west end of London, being attended by a hospital physician and a general practitioner, without having derived any or the least amelioration of his symptoms during this period. He stated that, previously to this attack, he had enjoyed a fair state of health. Happening to be exposed to cold and heavy rain, he got very wet, and hence his present attack. He had taken a great deal of diuretic and laxative medicines; but remained in *statu quo*. Change of air was suggested; and he was located in the neighbourhood in which I was then practising. On my visiting him, I found that he had œdema of the lower extremities; the heart's action was normal, with occasional intermissions. The urine was found to be albuminous on the addition of nitric acid.

I commenced by ordering this patient one grain and a half of hydrargyrum cum cretâ every four hours, with one grain of opium and two ounces of brandy diluted with twice its quantity of water, every four or five hours; strong beef-tea as diet, and effervescing medicine every six hours; and occasional vesication on the spine. On the eighth day, slight ptyalism occurred; he was then put on a diet of mutton chops, with one pint of porter or ale, twice a day, and half a pint of wine, the brandy being suspended. In twelve days, convalescence was established; and within a month from the commencement of my attendance, he was enabled to resume his accustomed duties.

It is important to bear in mind, that this patient, from his habits as a commercial traveller, took daily two or three pints of malt liquor, besides a pint of wine, with a generous diet of meat, etc., three times a day. It would have been unreasonable to expect the resources of nature or her restorative processes to be called into healthy action by the exercise of routine and the withdrawal of his usual beverages, without considering the previous habits of the patient, and the constant

mental and physical exertion to which he was daily and hourly subjected in the discharge of the duties of his calling.

Case II. The head of a commercial firm in the City experienced suddenly an attack of cerebral congestion, and was in a state of insensibility when I first visited him, at 9 P.M. He had just returned home from a journey; and it was apparent that his symptoms arose from gastric derangement. Three ounces of brandy, diluted with an equal quantity of hot water, were ordered to be administered; vesication was applied between the scapulæ; two grains of calomel, with four grains of rhubarb, were ordered to be given directly; and effervescing medicine every four hours, with an effervescing laxative in the morning. On my visit the following morning, sensibility was restored; the medicine had acted freely. Two ounces of brandy, with the same quantity of hot water, had been given twice in the night. In two or three days, this patient became convalescent.

In this case, like the former, the patient was in the habit of living generously, conducting the chief part of the travelling department, and taking moderately from one to two pints of ale, with a pint of wine, daily. Hence the rapid and safe convalescence he experienced, owing chiefly to the cause (gastric disturbance) having been promptly removed; the consequences subsiding in a few hours, with the assistance rendered by Art to the restorative processes of Nature.

Case III. Several years since, I was requested to visit a case of hemiplegia. The patient, a female, aged about 48, of robust constitution, and somewhat corpulent, was in a very weak and exhausted condition. She represented herself to have been attacked with giddiness in the head and sudden loss of consciousness. A medical man was sent for, who immediately bled her, and the next day repeated the operation, and administered purgative medicines. No improvement taking place at the end of a week, and change of air having been proposed, she was removed a few miles, to the neighbourhood where I was first consulted. On examining her condition, I found her pulse not more than 50, and general coldness of the trunk and extremities. I ordered two ounces of brandy to be taken directly, with an equal quantity of hot water; and to be repeated every four hours. I also prescribed one grain of disulphate of quinine in a pill every four hours, with effervescing draughts, vesication to the spine, and beef-tea to be given frequently. On the appetite being restored (which occurred in forty-eight hours), the further exhibition of brandy was suspended. Two mutton chops were now given daily, with two or three pints of porter or stout. In seven or eight days, this patient entirely regained the use of the paralysed parts, and became speedily convalescent. She has since continued to enjoy uninterrupted health.

Case IV. Within the last few months, I have had under my care four cases in dispensary practice where the auxiliary agency of diluted alcohol has materially contributed to the recovery of the sufferers. One was the case of a young man, aged 30, the subject of fever, who was discharged from the county hospital, and placed under my charge. On visiting him ten days since, I found him partially comatose; he could only be roused by shouting in his ears. He also had subsultus tendinum and picking of the bedclothes. Speedy vesication on the spine was induced by means of a camel's-hair brush dipped in the ammoniated solution of cantharides. An ounce of brandy, diluted with an equal quantity of cold water, was administered, and continued for several days, at periods varying from two or three to six hours. Sensibility was restored within forty-eight hours; and on the ninth day convalescence was established. He had taken nothing else but a little beef-tea since I had the charge of his case. On the day of his convalescence, he asked for a steak or mutton chop, the latter of which was readily conceded, and a half-pint of stout directed to be administered instead of the brandy. But for the exhibition of the brandy diluted, this patient would have sunk. I was told by the occupier of the house that "this patient was too far gone for me to be of any service to him", that he "was only sent home to die".

The three other cases were also cases of cerebral affection. Two were instances of insanity (melancholia), where the tonic plan of treatment, combined with a strictly regulated diet and the frequent use of small quantities of brandy (diluted), proved of great auxiliary service. Very moderate vesication was also pursued, and both were convalescent in three or four weeks.

The remaining case was one of hemiplegia, in a patient near 70, who had experienced the attack near six months. In his case, the hemiplegia was complete; and I found on visiting him, that he had no control or muscular power over either the left upper or lower extremity, and was unable to stand. By a strict diet of a generous character, aided by the use of one or two pints of porter each day, and two ounces of brandy diluted, this patient recovered the entire use of his lower extremity in about four months, and his upper extremity is now gradually yielding to the combined effects of a tonic and generous diet; the whole upper extremity having become obedient to the will, excepting the hand, the fingers of which are day by day recovering their use of flexion and extension. The medical treatment was chiefly small doses of quinine, with one-twelfth of a grain of morphine.

General Remarks. The inferences to be deduced from the detail of a very few of the cases which I have, as above, taken from my notebook, though very imperfectly given, go far to prove, I think, the efficacy of cordials as being powerful auxiliaries in the treatment of fevers, and of cerebral and nervous derangements. In fact, individuals such as children, as well as adults, the subjects of cerebral disturbance (the frequent accompaniment of remittent and continued fevers), are more safely and quickly restored to convalescence by the judicious exhibition of small quantities of wine, etc., from time to time. I have found in many cases of cerebral or spinal disturbance—especially in the Protean forms of spinal irritation, attended with severe local pain, usually of a periodical character—that these auxiliaries very materially contribute to assist the medical and dietetic treatment. Thus, as I stated at the commencement of my first paper, is substantiated the correctness of the late Dr. Todd's conclusion that the judicious and timely administration of alcohol, either in the form of diluted spirit, wine, or malt liquors, constitutes a nutritious aliment to the cerebral and spinal systems, when unduly exhausted, appearing to restore the balance of vital energy expended in the progress of asthenic diseases, where, without the auxiliary agency of cordials, nothing short of an unfavourable termination can be the result. Even when organic disease is present, the administration of cordials produces usually considerable alleviation of suffering and pain. In many incurable diseases, such as phthisis, cancer, etc., how great is the relief experienced by suffering patients from taking a moderate allowance of cordials! These sustain and support the irritable and exhausted condition of the nervous system, and thus gently smooth the passage to the grave.

SCROFULOUS DISEASES OF THE EXTERNAL LYMPHATIC GLANDS:

THEIR NATURE, VARIETY, AND TREATMENT.

By P. C. Price, Esq., Surgeon to the Great Northern Hospital; the Metropolitan Infirmary for Scrofulous Children at Margate; etc.

II.—Chronic Enlargements of the External Lymphatic Glands, from Hypertrophy of Structure, independent of Inflammatory Action.

[*Concluded from page* 703.]

General Treatment. In all diseases in which complication exists, prescribed forms of treatment must be more or less modified; and this observation is particularly relevant as regards the therapeutical management of this special glandular affection. It has been stated that, in all probability, in the majority of cases in which this derangement occurs, it obtains as a result of certain causes which have an extra lymphatic origin; and, therefore, before any hopeful treatment can be adopted, it is highly advisable that they should, if possible, be recognised. What these causes may be, it is often difficult to determine; but frequently a decided departure from health will point to some impairment of the digestive, secretive, or absorptive functions. It must be allowed, I think, that this kind of glandular affection is generally met with in each of the divisions which so commonly admit the development of strumous disease; viz., the sanguine, phlegmatic, and lymphatic; so that if in certain instances it appears to be but slightly, if at all, associated with well developed scrofula, still it must be ordinarily considered as in some way or other connected with this peculiar diathesis. Believing that the simpler forms of the affection, when appearing in the external glands, although not appreciable in those of the mesentery and other internal structures, are dependent on systemic causes, I usually commence the treatment by regulating the proper action of the various viscera. This is

best accomplished, when the *primæ viæ* are at fault, by unloading the bowels, and maintaining their proper action. Constipation is a very frequent accompaniment of glandular swellings, and it is astonishing to see how an alterative course of medicines is attended with almost immediate good effect, provided the disease has not been too long established. Mr. Abernethy was in the habit of treating these cases with calomel; but with what special views he used this powerful medicine does not clearly appear even from his own description. Although as a rule I do not resort to the administration of calomel in large and continuous doses, still there is no doubt that mild mercurial preparations are often of value, as the liver is generally torpid in its functions. For reasons already stated, I prefer small and repeated exhibitions of hydrargyrum cum cretâ in combination with compound rhubarb powder, or some alterative. To improve the tone of the digestive and assimilative powers is all important; for, as long as these remain neglected, the proper action of the various organs cannot take place. Mineral acids in combination with bark, quinine, and iron, are the most available adjuncts for restoring a healthy tone. For the more immediate treatment—reduction—of the disease, iodine, bromine, and cod-liver oil have during the past quarter of a century taken the first rank; and, if cure is to be obtained, perhaps no specific remedies are more valuable. Iodine and bromine may be exhibited in one or more of the forms already described, or in any of those which will meet with further consideration. When speaking of the action of iodine on indurated glands from vascular derangement, it was stated that the administration of the drug was not always so rapid or certain in its effects as could be wished for; and that not unfrequently disappointment followed even its most pertinacious use. This remark is even more applicable to the treatment by iodine of this form of glandular mischief than the last described; for considerable experience has proved to me that even its very extended exhibition is oftentimes attended with failure. Various reasons may be assigned for this want of success; but, whatever may be the correct one, it is more than probable that in the majority of cases of confirmed mischief, a hidden influence is at fault in keeping up the irritation, over which iodine has little or no control. In one instance, in particular, in which the constitution was saturated with iodine, little or no amendment or reduction in the gland swellings resulted. It may be asked—this important agent being oftentimes incapable of inducing resolution, or even arresting the further progress of the disease—what means should be adopted to procure amendment and cure? I fear even the most sanguine and experienced practitioner will readily admit that many cases, in which this form of glandular affection exists, are not really amenable to the treatment of any fixed medicinal means, and that the good to be expected is chiefly derivable from change of climate, and from the removal of those unwholesome influences to which the subject of the affection may be exposed. Rapid amendment in such cases, occurring especially among the poor, by this plan of rational treatment is frequently most marked. Much has been said and written on the direct advantage of sea-air and sea-bathing; and, while many excellent writers have been far too laudatory in their recommendation of these means, others have not sufficiently noticed the benefits which their employment often affords. Ample observation among both private and hospital patients at Margate, has assured me that immediate advantage is very frequently to be gained by a sea side residence, and a free recourse to sea-bathing, provided it be not contraindicated by reason of certain complications of constitution and disease. If with these means treatment by iodine, cod-liver oil, and tonics is added, I believe marked amendment and cure will oftentimes be obtained when but little hope was entertained from either ere change of climate was obtained. But, although a residence by the sea is often advantageous in the management of cases dependent on this kind of glandular disturbance, still it often happens that a less bracing and inland locality is more suitable. Individual cases must be managed according to circumstances; but, as a rule, I believe, a change of climate and residence is often expedient, and even necessary, when medicinal means solely employed have failed. It has already been hinted, that this form of glandular affection, when limited to the external lymphatic ganglia, after arriving at a certain stage and becoming permanent, is frequently unaccompanied with any strongly marked evidences of disturbance of the general health. In fact, it is not rare to see individual cases in which not the slightest effect is produced on the system. I have lately been interested in a case of this description, in which the glandular enlargement, especially of the cervical ganglia, has existed for years, and no perceptible effect has been produced on the constitution and vigour of the patient. The case has been under notice for a considerable period, and a large amount of iodine has been taken without having exercised any or little effect on the glandular system. This form of hypertrophy is more permanent when once established than other chronic enlargements; and frequently no perceptible changes are induced by the variations of seasons and temperatures. But, although this condition of hypertrophy is oftentimes comparatively harmless, still it is apt to progress to such an extent as to cause not only inconvenience but danger from mechanical causes. Moreover, fear is to be entertained that any subsequent complication may give rise to still more important lesions; for it has been noticed that more marked scrofulous and true tuberculous mischief is apt to arise, especially if the strumous diathesis be strongly portrayed: and it is on these grounds, if not on others, that such medicinal and general treatment should be adopted as is most likely not only to cure or amend the affection, but to prevent the occurrence of more distressing and dangerous complications.

Local Treatment. Although local treatment by means of certain applications has been highly extolled by many observant practitioners, still, I believe that a due consideration of the pathological changes that have induced an alteration in the condition of the affected glandular apparatus will at once show that much advantage is not, as a rule, to be hoped for from mere mechanical and therapeutical applications. When such means are, however, employed, either solely or with internally administered medicines, it is customary to adopt the use of those agents which have already been and will presently be more fully considered; viz., blistering; paintings with iodine, bromine, and their salts in the forms of tinctures, etc.; frictions with various powders, ointments, and oils; and the constant application of various solutions containing mineral salts, etc. But much harm instead of good may arise by a too pertinacious use of one or more of these various means. I have not unfrequently seen cuticular and cellular mischief occasioned by a too persistent application of iodine; while little or no appreciable advantage has been derived, so far as diminution in the glandular derangement was concerned. When enlargement is dependent on plastic material, doubtless iodine, etc., topically applied, is of some value; but, judging from my own experience, I cannot recommend, with any great hope of success, the treatment of this special form of glandular hypertrophy by local discutients, absorptives, etc. Sometimes diminution in size of implicated glands of this nature does ensue from repeated and long continued topical applications of iodine, mercury, etc.; but then, I believe, the general system has become more or less affected through absorption, as I have seen verified on more than one occasion.

Direct surgical treatment is, however, sometimes needed, as it may become expedient to remove one or more hypertrophied glands, which by reason of accumulation in size occasion not only deformity and inconvenience, but positive danger. Caustics and the knife are the two chief means in the hands of the surgeon to effect reduction or absolute removal. The application of caustics for such purpose has met with some consideration in previous pages, and I have only to reiterate what was then stated. Although a resort to caustics is in general, I consider, not only erroneous, but decidedly bad practice, still there are occasions when no other agent will prove of like advantage. The way in which caustics act when employed as a means of destruction, is by causing inflammation and suppuration of the tissues with which they are in contact. Such changes are more or less rapidly induced, in proportion to the agent employed; while the disturbance generated is in relation to the extent of local destruction and constitutional temperament. I have frequently known very serious results follow this plan of treatment, and I have rarely put it in practice for the removal of this form of glandular mischief.

When it is really expedient and necessary to take away one or more hypertrophied glands, the knife will be found the most certain, least painful, and efficient means at the disposal of the practical surgeon. Care must, however, be taken to select only such cases as are well marked for operative interference. When the gland-tumours are situated in close relation to large arterial and venous trunks, and nerves, extra judgment is required in advising and performing an operation; for experience has fully shewn that danger is apt to arise therefrom. An example of injudicious interference has been current since the days of Celsus; and there are few surgeons who cannot recall to recollection similar instances of bad practice. When circumstances are favourable, and removal well and carefully executed, success will, in general, attend direct and judicious surgical interference; for a slight scar will by the majority of patients, espe-

cially by those who take pride in the advantages of personal appearance, be deemed of less moment than an unsightly and irreducible gland-swelling.

Transactions of Branches.

METROPOLITAN COUNTIES BRANCH.

ON SUBCUTANEOUS OPIATE INJECTIONS.

By Thomas Ogier Ward, M.D., Winkfield.

[*Communicated July 17th*, 1860.]

In a former letter, published in the Journal of May 26th, I mentioned the relief afforded by the subcutaneous injection of morphine in a case of colica pictonum; and, having now used it in many varieties of painful affections, with unfailing success, as far as the relief of pain was concerned, I feel warranted in urging its more extensive use, especially as, with ordinary caution, it is not attended with any danger to life. The formula I generally use is one grain of morphine to a drachm of water; and of this I inject over the painful part from five to fifteen minims.

Case I. Rheumatic paralysis and wasting of the muscles of the shoulder and scapula in a middle aged man, with severe pain in the scaleni and other muscles of the affected side of the neck, came on suddenly in the night, without any assignable cause. When first seen, six months after the attack, he could not raise the arm higher than 45°; but, after three months treatment with blisters, stimulating liniments, acupuncture, Pulvermacher's chain, and exercise with a forge-bellows, etc., the muscles began to recover their size, and he could extend his arm horizontally. As, however, the pain in the side of the neck continued unabated, I injected ten minims of the solution of morphine, equal to one-fourth of a grain. In ten minutes, the pain had ceased; and, although it returned in a day or two, yet it caused so little inconvenience that in a few days he was able to resume his work. The only general effect he perceived from the injection was, that he felt "queer", as if he were half drunk.

Case II. This man first exhibited a variety of anomalous symptoms, the chief being acute pain in the left side, in the region of the heart, with cough and occasional hæmoptysis, with no physical signs of chest-disease, but with extensive dulness on percussion, extending across to the right hypochondrium, whence it had originated. He afterwards passed, at different times, copious bloody and purulent stools, containing quantities of "skins" (Query, Hydatids?). After this, though weakened, he always felt better. His cough, however, continued troublesome, and aggravated extremely a rheumatic headache which had long troubled him, making his scalp sore to the touch. As no medicine I gave him had any effect on the pain, I used the same injection as in the former case, and with exactly the same results; the pain subsided in about ten minutes, but he felt very "queer" as he walked home. The discharges from the bowels have quite ceased, and he now is able to do light field-work.

Case III. This was the case of colica pictonum already published in the Journal of May 26th.

Case IV. This was a case of acute rheumatic pain in the shoulder and down the front of the arm to the elbow, with swelling and intense pain; so that the patient, a middle aged man, had had no sleep for two or three nights. The skin was red and hot over the biceps, though this might have been caused by a bag of hot salt he had applied, which had given him relief during the night. I injected the skin over the biceps at the most painful part; and in ten minutes he could lay his hand on his head, and dress himself. The pain had entirely subsided, and did not return for two days; and then it was so much diminished that he was contented to recur to the hot salt for relief.

Case V. This patient, a married woman, aged 20, epileptic from fright for two years, had had nine fits in twenty-four hours, which left her so exhausted that she had kept her bed above a week, when the menses came on with such extreme pain that her mother got alarmed and sent for me. I found her groaning and rolling about her bed with pain seated about two inches below the umbilicus, where there was great tenderness on pressure. Fearing a recurrence of the fits, I injected a quarter of a grain of morphine; and, having waited a quarter of an hour without any abatement of the pain, I repeated the injection with one-third of a grain; and not being able to wait for the result, I desired her mother to send for some pills in the evening (camphor and hyoscyamus), if the pain continued. No one called for the pills; and the next day I was informed that the pain ceased, and she fell asleep immediately after I quitted the house, about 3 o'clock, P.M., and did not awake till 8 A.M. the next day, quite free from pain. It is worth remark, that though the fits usually returned every fortnight, they did not recur till a day over the three weeks, and then only once; and, upon the whole, I consider her improved in health since the operation.

Case VI. This is a woman living next door to Case IV, who, besides suffering from menorrhagia and renal calculus, is never free from rheumatic pains in some part. On this occasion, the pain was over the back of the head, where I injected one-fourth of a grain of morphine under the scalp. The pain was speedily allayed, as in the former cases; but the patient suffered from nausea and vomiting the next day, though the pain did not recur for some days, and then with less violence; nor has it ever been as severe as before the operation.

Case VII. The next operation was performed upon myself, for lumbago, or rather pain in the right kidney, though not attended with any passage of gravel or disturbance of the urine. The pain was of a dull aching character, with occasional paroxysms, and usually lasting some hours. As the attack occurred at bedtime, I knew I should get no sleep till it was allayed; and therefore I used a strong injection of above half a grain of morphine. The pain ceased in seven minutes, and I soon feel asleep; but I frequently awoke, from teazing dreams of the same subject continually recurring. On rising in the morning, I was pale, so giddy that I could not walk straight, and had a slight nausea, which ceased when I was quiet, but recurred on making exertion; so that I vomited three times in the course of the day. These feelings ceased in the evening, and I went to bed quite well, and slept through the night.

Case VIII. Ten days afterwards, I had another attack; and, warned by the previous effect, I only used one-sixth of a grain of morphine. The relief was not so speedy, not coming on for a quarter of an hour; but it was equally effectual as the larger dose.

Case IX. This was a case of violent toothache, from inflammation and abscess round the stump of a molar tooth, which I was asked to remove, but the patient's courage failed her. Having tried in vain creasote and chloroform, I injected the loose tissue below the gum with one-sixth of a grain of morphine, which soon moderated, though it did not remove the pain entirely; but the patient slept well that night. The next day, she consented to have the tooth removed, under chloroform; but the attempt was ineffectual, owing to her resistance; and when she came to herself, she refused to undergo a second trial, but begged to have the injection repeated. This was done about 12½ A.M.; but she did not lose the pain till 7 P.M. The day following, almost all appearance of inflammation was gone, and she was quite free from pain.

Remarks. From my experience in these nine, or rather ten, cases of operation, I am induced to believe that instances of dangerous results from its use may be avoided by a careful regulation of the dose of injection, even in cases of peculiar susceptibility to opiates, particularly if the dose be divided into two or three operations, with intervals of fifteen or twenty minutes, which is ample time to develope the anodyne influence of the remedy, even though its complete effect in removing pain may not have been shown by that time. Perhaps the power of absorption varies in different parts of the areolar tissue; for in Case IX, in which the full effect was delayed for some hours, the swelling caused by the injection had not subsided twenty-four hours after the second operation. It is an established fact, that the rectum absorbs much more rapidly than the vagina; and it is not improbable that, for security against noxious substances taken into the mouth, absorption may be slower in the areolar tissue around it than in the other apertures of the body.

Another conclusion may, I think, be drawn from these cases; viz., that pain of any kind, neuralgic or inflammatory, may be relieved by subcutaneous injections; and, as we can only explain the more rapid action of opiates administered in this manner by their immediate absorption into the circulation, it follows, as a necessary corollary, that in violent pain from acute inflammation, we need not wait to subdue it by antiphlogistic remedies, but proceed at once to the use of anodynes.

Progress of Medical Science:

AT HOME AND ABROAD.

PRACTICE OF MEDICINE AND PATHOLOGY.

DYSPNŒA AS A MECHANICAL CAUSE OF CONGESTION OF THE LUNGS.

In the *American Medical Times* for July 21, Dr. Andrew H. Smith has published an ingenious essay in explanation of the congestion of the lungs which results from severe or protracted dyspnœa. After referring to the theories of Haller, Goodwin, Bichat, Kay, Wintrich, and C. J. B. Williams, which chiefly attribute the impediment to the presence of venous blood in abnormal situations, he says that the degree of congestion capable of being explained by any of these theories may be estimated by examining the lungs of an animal destroyed by section of the medulla oblongata. In numerous instances in which he has performed this experiment, he has always found that, while some amount of pulmonary congestion was present, it was insignificant in comparison with that produced by occlusion of the trachea; although the chemical condition of the blood must be the same in the one case as in the other. He therefore argues that there must be another cause for the production of congestion by dyspnœa—and that this cause is to be found in the increased energy of the respiratory movements.

Dr. Smith observes that, in the mechanism of respiration, there are two avenues of ingress into the lungs—one by the air-passages for the air, the other by the blood-vessels for the blood; and that, in fact, we respire blood in precisely the same way and by the same mechanism as we respire air. The amount of blood drawn into the lungs in an ordinary inspiration is small, owing to the fact that the space acquired within the chest is readily filled out by air admitted through the trachea. But, obstruct the entrance of air, and at the same time increase the force of the inspiratory effort, and the amount of blood entering the lungs may be greatly increased. The atmospheric pressure upon the vessels within the thorax is rendered less than that upon the vessels of the body generally, and a rush of blood from every direction towards the thoracic cavity is the result. Hence in every case of dyspnœa depending upon obstruction of the air-passages, there must be a congested state of the lungs at the termination of every inspiratory effort. That the congestion which has thus been produced during inspiration is not relieved during expiration, is due to the following circumstances:—1. The amount of blood to be expelled is increased; 2. The interval between the inspirations is diminished, so that less time is allowed for its expulsion; 3. The tonicity of the vessels is impaired by their over-distension, so that the expelling force is hereby diminished.

The following experiment has been performed by Dr. Smith to show the difference between the degree of congestion resulting from non-aëration of the blood, and that produced by the additional effect of increased energy of the respiratory movements. A ligature was placed around the trachea of an animal, and drawn so tightly as to prevent completely the entrance of air into the lungs. At the same instant that the ligature was tightened, the thorax was freely opened on one side, so that the air passed without obstruction in and out of the pleural cavity. By this means the influence of the respiratory movements upon the lung of that side was entirely suspended, while with respect to the other lung, it remained comparatively unimpaired. On examining the lungs after death, the one on the side which was opened was found to be but slightly congested, while the other was gorged with blood. The chemical condition of the blood must have been the same in both lungs, since both were equally excluded from the atmosphere. The effect of any change taking place in the action of the heart, or in the pulmonary vessels, must also have been the same in one lung as in the other.

Dr. Smith infers from the preceding reasonings, that in every case in which the respiratory movements are increased to any considerable extent in force or frequency (the entrance of air being obstructed), there must be a proportionate degree of congestion of the lungs as a necessary mechanical result.

The operation of this principle is well illustrated in a case of bronchitis. At the outset of the disease, the bronchial mucous membrane is congested, its vessels turgid with blood. This condition implies a thickening of the membrane and a diminution of the calibre of the tubes, and hence an obstruction to the entrance of air into the lungs. At the same time, the accompanying febrile movement quickens the circulation, and produces an increased demand upon the lungs. The respiratory movements become more frequent and forcible; and the expansion of the thorax not being responded to by a prompt and sufficient influx of air into the lungs, a compensating increase in the amount of blood flowing in is the consequence. The pulmonary vessels, already overloaded, receive a new supply; and their tonicity, already impaired by the effect of the disease, is still further diminished by this increased distension. With every increase of congestion, there follows an increase of obstruction, and therefore of dyspnœa, which, in its turn, gives rise to a further increase of congestion. And so the process continues, the congestion aggravating the dyspnœa, and the dyspnœa aggravating the congestion, until finally the tension within the vessels arrives at such a point that a serous effusion takes place into the bronchial tubes, mingling itself with the products of inflammation. By this means the tension is relieved, and the actual stasis which would otherwise result is avoided. But if, as is often the case, the feebleness of the patient renders a sufficient expectoration impossible, or if the bronchial tubes, labouring under the disadvantage of having lost their ciliated epithelium, and of having their circular muscular fibres paralysed, cannot relieve themselves of the accumulating mass, then suffocation is inevitable, unless the process can be arrested by the intervention of art.

From the above considerations, and from the results of numerous experiments on animals and of a few upon the human subject, Dr. Smith has been led to believe that, in cases in which the cause of the obstruction cannot be directly attacked, the most direct and certain means of relieving the dyspnœa is by affording to the lungs an atmosphere which shall contain, in the volume which finds access to the air-cells, a quantity of oxygen equal to that respired in health. By this means the demand for oxygen is supplied, without the necessity for those violent muscular efforts which aggravate the cause of the dyspnœa, while at the same time they exhaust the strength of the patient.

TYPHUS AND TYPHOID FEVER.

Dr. Henry Kennedy of Dublin, in a paper published in the *Edinburgh Medical Journal* for the present month, lays down the following propositions as the result of his consideration of the relationship between the various types of fever.

"1. Typhus and typhoid fevers exist in Paris, London, Sweden, parts of America, and Dublin; and relapsing fever in Great Britain and Ireland. 2. In Dublin, other types of fever exist, equally distinct from any of these; of which gastric, remarkable for its great duration, the congestive typhus of Armstrong, the *febris nervosa* of Huxham, and in summer, the inflammatory fevers, may be adduced as examples. 3. These may exist in the same family, and at the same time. 4. When a whole family is attacked at once, some may exhibit spots, and others not. 5. Two crops of eruption, as observed long since by Grant, are not uncommon in the typhus of Dublin; and either may precede the other. 6. One of these may be a bright red, and the other of a much darker hue; and they often coexist. 7. Petechiæ may exist with typhoid fever; and bright lenticular spots without this fever. 8. Bright lenticular spots may be followed by petechiæ. 9. It would seem as if typhus and typhoid fever could exist in the same patient, and at the same time. 10. Whilst in London intestinal hæmorrhage is common in typhoid fever, it is much rarer in Paris and Dublin. 11. In Dublin the same hæmorrhage is not uncommon in typhus. 12. Cerebral complication is more common to typhoid fever than is usually taught."

Dr. Kennedy has been led to believe, contrary to the opinion of Dr. Jenner and other pathologists, that typhus and typhoid fevers are the result of a common poison. The variation in the types he is disposed to attribute especially to the influence of temperament, of habits, of constitution, and of the amount of the poison taken into the system. To refute the idea of the less contagious nature of typhoid than of typhus, he refers to the papers of Dr. William Budd, which tend to show the contagious nature of typhoid fever. As to their non-occurrence in

the same locality, an answer is found in the work of Dr. Huss; who states that the two forms often arose under the same circumstances, and in the same house—an intermediate form being sometimes developed.

In speaking of the treatment of typhoid fever, Dr. Kennedy states that the practice in Dublin is to give stimulants, not as a matter of course, but because the particular case requires it. He believes that stimulants are used too indiscriminately.

"It seems," he says, "to be a very general impression, that if stimulants are to be used, it matters little of what kind they are. Hence brandy, wine, beef-tea, etc., are constantly spoken of as being given to the same patient. This is surely not the proper way of dealing with such a matter. With the knowledge we now have of the varied composition of these fluids—for the most of them are fluids—it appears to me to be injudicious to use them as is done at present; and I would particularly notice here the difference between wine and beef tea. For a long period I have been convinced in my own mind that these two cannot be used indiscriminately; for it has been matter of observation to me that their effects are very different. Of the two, and contrary to what is usually thought, wine may be given with much less risk of unpleasant or injurious effects following, than beef-tea; and when the latter is given indiscreetly, either as to time or quantity, it is very apt to be followed by secondary inflammations, which often cause fever cases to be so precarious in their results. It appears to me that the differences spoken of as resulting from the use of the two fluids are well accounted for by a consideration of the difference of their composition; the amount of nitrogenous material—chiefly in the form of fibrine—being so very much greater in the beef-tea than in the wine. On the other hand, the latest, and, as I believe, the best analysis of wine, that by Mulder, shows us that it contains, but only in the very smallest quantities, several of those matters which are essential to our frames; such as albumen, iron, etc. And this analysis bears out, curiously enough, the remark of two of our ablest physicians on fever—Drs. Cheyne and Barker—made above forty years since; viz., that, after a trial of whiskey, which was used for the sake of lessening expense, they found that it would not supply the place of wine. The point brought under notice, and which I am not aware has been specially alluded to by any writer, would seem to be one of very considerable moment, as bearing directly on the treatment of not only fever, but of other acute diseases. Enough, however, has been advanced to call attention to the subject, and show the discrimination that is to be exercised. Cases, of course, will occur where both classes of stimulants may be used at the same time, and with the greatest advantage. But the point is, that they are not necessarily to be so used, and that mischief may result if a proper judgment be not exercised."

Of carbonate of ammonia, he says that he does not think it suitable for the treatment of fever; nor has he for many years used it in this way.

"I had observed that diarrhœa was exceedingly apt to follow its use. In cases of typhoid fever this would not have been so remarkable; for diarrhœa is there a symptom of the complaint. But it also occurred in cases where there was no irritation in the intestinal canal; as, for instance, erysipelas, pneumonia, and other chest affections. In this way my attention was drawn to the effect of the medicine; and I have now little or no doubt that very great caution should be used when ordering it in fevers, more particularly those of the typhoid type. My own conviction on this point is so strong, that I would not give it at all; and the effects of the medicine on the blood, as shewn in Dr. Richardson's very able work, go far to confirm the opinion advanced."

Dr. Kennedy's treatment of typhoid fever is the following. If there be pain in the right iliac fossa, a few leeches are applied—care being taken that they do not bleed too long; if they be not required, a blister is applied, and after it a warm poultice. As internal medicine, he gives dilute sulphuric acid; prescribing from one to three drachms in an eight ounce mixture with from two to five drops of laudanum in each ounce; an ounce is given at intervals suited to the urgency of the case. In its administration, however, care must be taken that it do not *suddenly* check the diarrhœa. In cases where the diarrhœa suddenly ceases spontaneously, its cessation being attended by dangerous chest or head symptoms, Dr. Kennedy has adopted, he believes with benefit, the plan of keeping open a blistered surface for some days, generally on the chest.

LETTERS AND COMMUNICATIONS.

Letters or communications for the Journal should be addressed to Dr. Wynter, Coleherne Court, Old Brompton, S.W.

Letters regarding the business department of the Journal, and corrected proofs, should be sent to 37, Great Queen Street, Lincoln's Inn Fields, W.C.

British Medical Journal.

SATURDAY, SEPTEMBER 15th, 1860.

LONDON BREAD AND BAKERIES.

A discussion has been going on in the *Times* during the past week touching the method of manufacturing the most important of all articles of food. The writer of "Ceres at Dockhead," in *All the Year Round*, made a statement to the effect that, in some instances, the dough is kneaded by the feet in the metropolis—a statement which Dr. Druitt, the medical officer of St. George's, Hanover Square, has emphatically denied in the columns of the *Times*. We have no doubt that he is perfectly justified in his denial; but we are afraid we can go no further with him in his defence of the practices and impurities of metropolitan bakehouses. When it is remembered that the baker works in an atmosphere often heated by the oven and gas to 100°, and never to less than 90°, it must be conceded that his skin will be bathed in perspiration; and really it is quite a question of late whether the sweat of a coarse red haired man's arm is one whit less disgusting than that of his feet. What the public have a right to complain of is, that their daily food should be mixed with impure secretions of the human body, when machinery is available for the duty.

Putting aside, however, the question of feet *versus* hands in the kneading of the dough, we may ask if Dr. Druitt, in his letter to the *Times*, has given a fair estimate of the condition of the bakehouses in the metropolis, when he says that, with respect to twenty-five bakehouses examined, "I can state that their premises are free from the disgusting nuisances which are alleged to exist in such places; that pains are taken to ventilate all of them (singularly ingenious and perfect in some instances); and that the cleanliness of the place and of the process of manufacture, and the sleeping accommodation furnished to the men, would contrast very favourably with that which is found in the underground part of some noblemen's houses"? We have no reason to doubt that this is a faithful picture of the better class bakehouses in that highly favoured quarter of the town, May Fair; but we must beg leave entirely to dissent from the inference that it is by any means a fair sample of the condition of the bakeries in the metropolis generally. The experience of Dr. Guy, a physician who has devoted his time to the sanitary condition of bakers and bakehouses more largely than any other medical man, gives a sketch of their condition which contrasts very strongly with the *couleur de rose* picture presented to us by Dr. Druitt. In a lecture he delivered to the journeymen bakers in 1848, on the evils of nightwork and long hours of labour, he quotes the following instances of impurities in bakehouses collected by a journeyman-baker:—

"1. Under ground—two ovens—no daylight—no ventilation—very hot and sulphurous.

"2. Under ground—no daylight—often flooded—very bad smells—overrun with rats—no ventilation.

"3. Under ground—two ovens—no daylight—very hot and sulphurous—low ceiling—no ventilation but what comes from the doors—very large business.

"4. Under ground—three ovens—use gas at all times—very hot and sulphurous.

"5. Under ground bakehouse—very dark, obliged to use gas—not high enough for a man five feet nine inches to stand upright in without hitting his head—very hot—one oven.

"6. Two ovens—very dark—full of cold draughts—the rain falls on the man that works at one of the ovens—very small bed in the flour-loft.

"7. Two ovens—half under ground—no daylight or ventilation but what comes from the door—privy on the top of the oven—very hot.

"8. Under ground—bakehouse very small, and hot—ventilation from a hatchway—the men are obliged to go out for air to recover themselves before they can eat.

"9. A privy in the bakehouse—bread room under the stairs.

"10. Half under ground—small bakehouse—privy in it—very bad smells."

These pictures are enough to sicken one, but we have yet to bring the following masterpiece contained in the evidence laid before the Metropolitan Sanitary Commission:—

"In one instance, in a decent-looking shop in a respectable neighbourhood, I found the soil-pipe within a foot of the trough in which the bread was made; the pipe in a very unsound state, and the flour in some danger of being moistened by its contents. Indeed, I was assured by a baker who accompanied me, that he had himself seen the sewage flowing into the trough. On the occasion of my visit, the floor was damp with the drippings of this pipe, and the atmosphere very offensive. In another equally respectable-looking shop, I found the cellar at the back of the bakehouse receiving all the drainage of the establishment, and the whole basement very offensive."

When we remember that, when there is a privy in the basement, it is ordinarily at the back of the premises, we have a clue to a system of aërating the dough, in the dirtier bakehouses, which is perfectly unique. For instance, the oven is situated in the cellar under the road, the mixing trough in the basement, and the privy, as we have stated, behind. It must be clear, therefore, that the current of sewage-tainted air that is sucked towards the oven must pass over the dough in course of being kneaded; and how much of it becomes absorbed in its passage can only be measured by the length of time the kneading process is going on. Thus, what with sweat and patches of diseased skin—eruptions of the epidermis are very common with bakers—it cannot be said that the present method of metropolitan bread-making is highly attractive.

Dr. Druitt does not find much alum in the bread he analysed. Dr. Hassall found it very largely; and he also found that it increased in quantity exactly in proportion as the neighbourhood in which the bread was purchased increased in poverty. This is just what one would have expected. May Fair can afford to pay for good sound wheaten flour; St. Giles can't; hence the adulterator is called in, to make it look nice to the eye, if it be unwholesome to the palate.

But the best proof of the bad atmosphere of bakehouses is to be found in the fearful mortality and the deplorable state of health existing among the workers in them. Dr. Guy found that, taking one hundred and eleven bakers, there were no less than one hundred and twenty-five diseases distributed amongst them. Comparing these unhappy artizans with compositors, who suffer most severely from chest-diseases, in consequence of working in bad air, he found that their case was deplorable; for whereas, out of one hundred compositors, only twenty-four complained of affections of the chest, out of one hundred bakers, no less than eighty complained of similar affections; and when we come to spitting of blood, the gravest sign of all of diseased lungs, Dr. Guy tells us that, while the compositors suffered in the proportion of twelve and a half in the hundred, the bakers suffered in the proportion of thirty-one in the hundred. Dr. Druitt, it is true, informs us that there is no class of men who enjoy "greater privileges, in the shape of pay, food, fire, and lodging, than the journeyman bakers"; but even he must admit that these privileges are rather dearly purchased at the price of blood-spitting on such a tremendous scale as this.

The question of pure bread is clearly one of the last importance not only to the consumer, but to the producer. We hail, therefore, the new process patented by a member of our own profession, Dr. Dauglish, as one of the greatest possible boons to humanity. Whilst the machinery employed in the kneading process at once does away with the *necessity* for mixing our daily bread with the excreta of the human body, it at the same time necessitates the employment of spacious workshops, well lighted, well ventilated, in which the poor baker can earn his living without paying for it the fearful price of the destruction of his lungs.

PUBLIC SERVICES PUNISHED BY DEATH.

The death of two public men engaged in the elaboration and carrying out of a great financial revolution in our Indian Empire, may not at first sight present any particular medical aspect. India is proverbially unhealthy to the newly arrived European; and with that reflection the public read the announcement of the sudden demise of Sir Henry Ward and Mr. Wilson, as ordinary occurrences beyond the power of man to prevent.

The sanitarian, however, will pass over such an event, fraught perhaps with deep importance to the tranquillity of our Eastern possessions, with no such equanimity, and will by no means consider these deaths to have been unavoidable. Sir Henry Ward, coming from one of the most beautiful climates in the world, finds himself constrained to take up his residence at a most unhealthy point of the sea-coast. Mr. Wilson, arriving direct from England, is perforce obliged to locate himself at the seat of government—a swamp in the delta of the Ganges. We know that we cannot have great commercial ports in other than low situations, generally at the *embouchures* of rivers; but what, we ask, is the necessity of fixing upon such places as the seats of government? Why consign our ablest men to deadly spots, simply because cities are founded there? If we find it necessary to send out the most distinguished of our public men to the East, have we a right to deliberately sacrifice their lives by consigning them to spots where the chances are that sooner or later they will perish before their time? Sir Ranald Martin has over and over again pointed out that in India there are hill-stations, where the European can maintain his health perfectly. Knowing this

fact as the English Government must do, why should they confine the seats of the Indian governments to the most unhealthy spots to be found in the presidencies? England is not so fruitful in able men, that we can afford to sacrifice them, as both Sir Henry Ward and Mr. Wilson have been sacrificed. Let the seats of government by all means be removed to those gentler climates equally inaccessible to bowel complaints and to fevers; and the public will no longer be shocked with the intelligence of the deaths of able public servants, struck down in the prime of manhood by entirely preventable diseases.

THE WEEK.

A case of malpractice is reported in the *American Medical Times* for August 25th, as having lately occurred in New York under the following circumstances, which were elicited at the inquest. The wife of a person named Foster was confined of a child, and was, after her confinement, attended by a Dr. Allen, in the absence of Dr. Burke, the regular family attendant. On the occasion of Dr. Allen's second visit, Mrs. Foster told him that the infant was labouring under an attack of diarrhœa, when he wrote a prescription of powders, one of which was to be given at night, and in case it failed to afford relief, another was to be administered in the morning. The prescription was made up at a drug store, but the clerk remarked that it was too strong a dose for a child, two grains of opium forming a part of it; but that it was not his business but that of the doctor who wrote the prescription. Only one-half of one of the powders was given to the child; and fifteen minutes after it had been administered the infant was thrown into convulsions, in which it continued in intervals until one o'clock the next afternoon, when death resulted. Prior to the death of the child, Dr. Allen had been called in, when he remarked that the child had been poisoned, and that wrong medicine had been given it, adding, that either he or the druggist had made a mistake; the prescription shown was the one that he wrote, and the medicine that which he procured from the druggist; he did not believe that the child swallowed more than one-half of the powder that was given it. Dr. Allen stated that he had prescribed two grains of *opium* in four powders, intending at the time to give *rhubarb*. He said that he had had considerable trouble in his family, and that his mind was somewhat discomposed in consequence; that he had an adult patient suffering from dysentery, and must have been thinking of the medicine for him when he prescribed for the child. The druggist who prepared the medicine said that he supposed that, as it was intended for a child, it would have been subdivided into smaller powders. The jury returned the following verdict:—

"That deceased came to his death from convulsions produced by an over-dose of opium, administered by Dr. Macdonald Allen. The jury believe the physician was guilty of gross carelessness, and we further censure the druggist for not warning the father of the danger of administering so large a dose of opium to so young a child."

After the rendering of the verdict, the Coroner announced that he should hold Dr. Allen in the sum of 500 dollars to answer before the grand jury. After examination, Dr. Allen was released from custody on bail.

Association Intelligence.

SPECIAL MEETING OF COMMITTEE OF COUNCIL.

A Special Meeting will be holden at the Queen's Hotel, Birmingham, on Thursday, the 20th instant, at one o'clock, for the purpose of taking into consideration the general management of the Journal.

Philip H. Williams, M.D.,
General Secretary.

Worcester, September 4th, 1860.

THIRD LIST OF SUBSCRIPTIONS.

Dr. Williams will feel obliged if the Honorary Secretaries will forward any subscriptions they may have in hand, either to Sir Charles Hastings or himself, not later than the 29th inst., so that they may be published in the Journal.

Worcester, September 4th, 1860.

SOUTH-EASTERN BRANCH:

ROCHESTER, MAIDSTONE, GRAVESEND, AND DARTFORD DISTRICT MEETINGS.

The first meeting for the present session will be held at the Bull Inn, Dartford, on Friday, September 28th, at 3.45 P.M. Dinner (punctually at 5.30 P.M.) will be prepared for those who may be able to remain.

Trains will leave Dartford for Rochester, Maidstone, and Sittingbourne, at 8 P.M., and for London at 8.40.

Gentlemen intending to dine, are requested to give an intimation thereof on or before Wednesday, Sept. 26th, to Mr. Culhane of Dartford, Dr. Spurrell of Bexley Heath, or to

James Dulvey, *Honorary Secretary.*

Brompton, Chatham, September 1860.

Editor's Letter Box.

SUBCUTANEOUS INJECTION OF NARCOTICS.

Letter from Thomas Walker, M.D.

Sir,—As the practice of the subcutaneous injection of solutions of morphia and other medicines, with the view of procuring a more speedy or more powerful effect than when administered by the mouth, is one of recent introduction, it may, to many of my medical friends who have not yet tried it, be interesting to hear something respecting it from one who has done so.

The merit of suggesting this method of using narcotic solutions is due to Dr. Alexander Wood of Edinburgh. I have within the last six months had recourse to it in various cases both in private and dispensary practice, chiefly those of local pains of neuralgic character, whether acute, chronic, periodic, or persistent. The injection which I have generally used has been the solution of morphia, as directed in the London *Pharmacopœia* (gr. j to ʒj of water); and the quantity injected at one time has varied from ♏x to ♏cxx. No less various have been the parts of the surface where I have used it, having injected this solution into the cellular tissue of the eyelids, temples, nucha, throat, neck, interscapular, supraclavicular, infraclavicular, lumbar, and abdominal regions, and also of the arm, leg, and abdomen. In the hip I have penetrated deeply, so as to reach the sciatic nerve as it emerges from the pelvis. I have in one case used it daily for the last three weeks, for the relief of periodic returns of violent neuralgic pain in the eyeball. In no case, where I have seen occasion to make use of this method, have I had any reason to regret its employment, except that of its having occasionally failed in producing the hoped for relief. Any alarming or extreme amount of narcotisation I have not experienced, nor anything besides what might have been anticipated from the same quantity of morphia given in a draught. I can, however, testify to the effect being decidedly more rapid, and so far more satisfactory, than when the medicine is taken internally. In some cases, faintness and

giddiness have been almost immediately induced; and this independent of any emotional excitement on the part of the patient. I may also state that, in cases in which any opiate taken by the mouth has always given rise to severe and long continued sickness, its use by subcutaneous injection has generally been unattended by this inconvenience. In a case in which I am now using it, my patient tells me that on a former occasion, when opiates were prescribed for her, her medical attendants, finding that violent sickness invariably followed their internal administration, had therefore recourse to the endermic method, by blistering, removing the epidermis, and sprinkling the surface with morphia; and in this case I have witnessed the same production of gastric disorder from opiates taken into the stomach, but have had the satisfaction of procuring their beneficial effect, without this disturbance, when used by subcutaneous injection.

In using the syringe and tubular needle, my object has always been to avoid every structure except the skin and subcutaneous cellular tissue, with the exception of those cases in which I desired to reach the sciatic nerve. This has not seemed to me to require any amount of manual dexterity beyond that which ought to belong to every operating surgeon.

I have occasionally and purposely injected a little air previously to injecting the fluid, so as partially to inflate the cellular tissue, and so to increase the absorbing surface. My practice is, when I desire to inject a larger quantity of the solution than the mxxv (which is, I believe, the usual capacity of the syringe made for this operation), to unscrew the glass syringe from the cannula, re-fill it, reattach it, and reinject, repeating this as often as necessary, in preference to making more than one puncture.

Instead of using a vinous solution of the alkaloid, as suggested by Dr. Wood, with a view to save the instrument from rust, I wash it out, after use, with a little alcohol; and find the plan effectual in preserving the permeability of the capillary bore of the needle. I am, etc.,

Thomas Walker.

Peterborough, August 22nd, 1860.

IMPORTANCE OF THE EARLY TREATMENT OF INSANITY.

Letter from H. Gramshaw, Esq.

Sir,—Having devoted myself to the treatment of insanity in its earliest stages, I cannot help corroborating your views on the necessity that exists for a watchful eye being kept by the profession on the insidious approach of so sad a calamity.

Our greatest poet, having somewhat despondingly asked the question, "Who can minister to a mind diseased?"—has received for answer the melancholy fact that too often the golden opportunity for such ministration has slipped away, never again to be recalled.

I can conceive no task more delightful than that of being instrumental in clearing away the clouds and vapours that obscure the bright sun of man's intellect, when Reason is beginning to vacate her throne; and no reflection more painful than that, through carelessness or ignorance, a fine mind has perished, and left its former possessor to sink into a pitiable caricature of humanity.

Forcing itself also on my notice is the fact that we have to thank the authors and publishers of those wretched compilations put forth avowedly for the guidance of the young, and teeming with directions so artfully worded as to excite the very terrors they profess to allay, for mischief of the gravest character on the mind of youth, and also on that of sensitive persons about to marry—a lamentable proof of which, no doubt, existed in the case of a recent and respected coroner, whose death was of so tragical a character.

I find that many persons are averse to sending relatives to an asylum when the brain is incipiently diseased, fearing lest, by doing so, the patient should be *stamped for life*. This is not to be wondered at. But it behoves us to make provision for a state of things which leads to the ratification of an evil instead of to its cure. If I am to judge by my own experience, it will lead me to conclude that the public are very glad to avail themselves of those intermediate establishments which have been suggested as a desideratum to meet an existing difficulty.

I am, etc., Henry Gramshaw.

Laxfield Villa, near Framlingham, September 12th, 1860.

SPECIAL HOSPITALS.

Sir,—As one of the elements in the consideration of the question of special hospitals, it would be of essential advantage not to lose sight of that dismal blot on our hospital system so feelingly referred to the other day by the *Times*. I mean the present position of assistant-surgeons and assistant-physicians. We have within a comparatively short period had four resignations, or threatened resignations, of assistant-surgeons in our four chief hospitals; viz., at Guy's, St. Bartholomew's, King's College, and at the London Hospital. Let us take the first two—Guy's and St. Bartholomew's. There is at each of these hospitals the *maximum* of work with the *minimum* of workers; or, in other words, especially as regards St. Bartholomew's, we have a surgical staff that might and ought to be doubled, to do the yearly increasing work now left to dressers, house-surgeons, etc.; but so close and exclusive is the hold that the chief surgeons have on the establishment and its patronage, that no matter how the work is slurred over, or however dissatisfied men who have acted as assistant-surgeons for thirty years may be, in the hope of that good time coming when they shall be full surgeons, still the full surgeons (every year becoming more feeble) will not budge an inch. Mr. Callaway accordingly leaves Guy's in disgust and dismay; and Mr. McWhinnie leaves St. Bartholomew's. The fact is, there is work—aye, four times over—for both these gentlemen, and for those who have succeeded them. One of the leading causes of the special hospitals "counterblast" is, in reality, this exclusiveness and close monopoly of hospital patronage obtained by the elder or chief surgeons over the younger men, and the systematic neglect of the assistant-surgeons; but of course it is no one's interest, in the hospitals aforesaid, to say a word about it.

You may depend on it, we shall never get at the nature of the present evil of "specialism" till we break through the outer pie-crust of college council civilities, and ask our examining friends in Lincoln's Inn Fields and Pall Mall East how much of the mischief lies at their own doors. We may write about it till the crack of doom; and our Torquay Committee may report on it—

> "With all such reading as was never read;
> So spins the silkworm small its slender store,
> And labours till it clouds itself all o'er";

but, till you get at the root of the thing, it will, like a noxious weed, go on spreading.

Why should the *Times* always direct us? The Torquay Committee has one specially good man in its number, who knows the hospitals thoroughly. If he could be induced to speak out, it is evident he might furnish some hints; but he is himself under the cold shade of the octogenarian chiefs of the College Council in Lincoln's Inn Fields.

There is another hope of late, that the medical students may take it up. If they do, they must not be coaxed into silence. Let me advise them at the coming introductories, especially at St. Bartholomew's, to cheer for special hospitals, till the present special blot on our hospital system is removed, or made less offensive. I am, etc., K.

September 10th, 1860.

Medical News.

BIRTHS, MARRIAGES, DEATHS, AND APPOINTMENTS.

** In these lists, an asterisk is prefixed to the names of Members of the Association.*

BIRTHS.

Of sons, the wives of—

Hogg, Jabez, Esq., 1, Bedford Square, on September 11.

King, H. Stavely, M.D., Brook Street, on September 11.

Of a daughter, the wife of—

Collum, Robert, M.D., Chester Place, on September 10.

MARRIAGES.

Eccleston, Thomas B., Esq., Surgeon, 4th Royal Lancashire Light Infantry, to Elizabeth, only child of the late *John Green, M.D., of Newton-in-the-Willows, Lancashire, on September 5.

Empson, Charles F., Esq., Surgeon, of Selby, to Alice, youngest daughter of Thomas Rhodes, Esq., solicitor, Market Rasen, on September 6.

Fisher, Stephen, Esq., Paymaster R.N., to Frances Ann, fourth daughter of the late Andrew Dods, M.D., R.N., at Berwick-upon-Tweed, on September 6.

Geary, Thomas, Esq., barrister-at-law, of the Middle Temple, to Louisa, eldest daughter of *Thomas Hunt, Esq., Alfred Place, Bedford Square, on September 11.

Cole, Edward H., Esq., Surgeon, Pernambuco, to Harriette Eliza, daughter of *J. J. Godfrey, Esq., Liverpool, on September 6.

Kerr, Russell James, Esq., eldest surviving son of William C. Kerr, Esq., Surgeon, Newnham, Gloucestershire, to Rosa M. A., eldest daughter of the late G. B. Griffiths, Esq., of Castle Hill, Englefield Green, Surrey, on September 4.

DEATHS.

Chermside, Sir Alexander, M.D., K.C.B., at Oxford, on September 8.

Hammond. On September 4th, at Winchester, aged 62, Ellen, widow of the late Thomas M. Hammond, Esq., Surgeon.

Piercey, Moses, Esq., Surgeon, at Portsmouth, aged 49, on September 10.

PASS LISTS.

University of Edinburgh. On August 1st, the annual ceremony of Graduation in Medicine took place in the University of Edinburgh, under the presidency of Sir David Brewster, Principal of the University. The following is a list of the graduates. Those to whose names three asterisks are prefixed, obtained prizes for their dissertations; those who have two asterisks prefixed, were deemed worthy of competing for the prizes; and those to whose names one asterisk is prefixed, received commendation for their dissertations.

Scotland.

Allan, James
*Anderson, William
Ballantyne, Alexander
**Bonthron, Andrew
Brown, Colville
*Cowie, George
***Dickson, Alexander
Erskine, Robert
Fairbairn, William John
Hood, George
Inglis, Robert
**Little, Robert
*Lyell, David
McDougall, James Nairn
***McIntosh, W. Carmichael
**Maclagan, Robert Craig
Maclagan, Thomas John
*Middleton, James
*Monteath, George
Nicoll, John Black
*O'Neill, John
Robertson, William B.
Ross, John
Rutherford, Gideon
*Saidler, James
Scott, Walter
*Sloan, Robert Stirling
Spence, Robert
Thom, John James
Thomson, Ebenezer
Warden, Thomas
Whitefield, Peter Plenderleith, A.M.Edin.

From England.

*Allan, Christopher James
***Annandale, Thomas
Broster, John
Cusworth, Wm. Wilson
King, John Henry C. E.
Langford, Henry Edward
Leadam, William Ward
Low, William Cook
**Scott, Henry
Scott, William
Sheriff, William
*Shore, Offley Bohun

From Ireland.

Bell, William Riddall
*White, Samuel Gamble

From India.

McMaster, Valentine Munbee

From the Cape of Good Hope.

*Abercrombie, Alexander
De Landsberg, John P.

From the Mauritius.

Beaugeard, H. Lazare
Le Déant, Jean Etienne A.

From America.

Jones, John Curtis

From Canada.

Racey, John

From Nova Scotia.

Moren, Arthur

From Barbadoes.

Branch, William John
Piggott, Wm. Cumming

From Trinidad.

Murray, Gustavus Charles P.

The subject of Dr. Annandale's essay was "Injuries of the Hip-joint"; that of Dr. Dickson's, "The Development of the Flower, and especially the Pistil, in the Caryophyllaceæ"; and that of Dr. McIntosh's, "Observations and Experiments on the Carcinus Mœnas". An able address was delivered to the new graduates by Professor Hughes Bennett.

DEATHS FROM CHLOROFORM.

Two cases of death from chloroform have recently occurred.

One took place on August 1st, at the Bellevue Hospital, New York. The patient, a man named Michael Lanahan, aged 40, was about to undergo circumcision, having a chancre under the prepuce. Chloroform was administered on a napkin by Dr. Rives, acting senior assistant. After administering the chloroform to the amount of about an ounce and a half, in small quantities at a time for four or five minutes, Dr. Rives was led to desist by hearing a sudden stertorous expiration on the part of the patient. After a few more such expirations followed by regular inspirations, he ceased to breathe. Attempts at resuscitation were made by alternately compressing and relaxing the chest, by applying the galvanic battery to the chest and the neck, by inflating the lungs by means of a tube and bellows, and by rubbing the limbs; but all these means, though continued for an hour and ten minutes, were found to be of no avail. At the *post mortem* examination, twenty-eight hours after death, the heart was found to be in a state of fatty degeneration. The lungs were congested throughout, especially at the posterior part, and contained some apoplectic clots; both were œdematous and less crepitant than natural. No physical examination of the chest appears to have been made before administering the chloroform; it is merely stated that the respiration was natural and the pulse good.

The other case occurred last week in the Northampton Infirmary, in the person of a man named Carrell, who had entered the institution for the purpose of having a tumour removed from his back. On Wednesday week he was taken to the operating room, for the purpose of having the tumour extracted. He expressed a wish that chloroform might be administered before the operation commenced. Mr. Mash did not think it necessary to use chloroform, and explained to Carrell the nature of the operation, telling him that it would not be very painful nor very dangerous, but deceased still persisted in his wish. Mr. Mash therefore consulted Dr. Ashdown, and requested that gentleman to examine the deceased to ascertain if he was able to bear the effects of chloroform. Dr. Ashdown said there was no danger, and accordingly, the house-surgeon, Mr. Gray, administered the anæsthetic on a handkerchief. Its effects were soon visible upon deceased, who duly became insensible, without anything unusual being observed, although strictly noticed. On removing him into a proper position for performing the operation, it was observed that his countenance was very much changed. The suspicions of the operators were at once aroused, and immediate steps were adopted for bringing the man to his senses again, instead of commencing their surgical operation. Water and other restoratives were resorted to, but all to no purpose. Artificial breathing was then tried, but this, too, was unavailing; and after an hour's endeavours at restoration, the deceased was reluctantly given up as lost. An inquest was held at the Infirmary, on the following day, when the jury at once returned a verdict "That deceased's death was caused by chloroform duly administered." They also stated that in their opinion the surgeons were entirely free from blame in the matter, as it appeared to them that the proper caution had been taken when administering the chloroform.

In connection with these cases, we have to notice one of dangerous asphyxia from chloroform, in which resuscitation was brought about by vigorous treatment. It is recorded by Dr. H. C. May in the *American Medical Times* for August 25th. Dr. May was called to a man who, in a state of intoxication, had dislocated his femur upwards and backwards. Great difficulty being experienced in the reduction, it was determined to give chloroform. An hour having been allowed for him to become sober, chloroform was given on a handkerchief. In about five minutes, stertorous breathing set in and the respiration became very slow and laboured; the pulse flagged, and the skin became livid, Dr. May immediately reduced the limb by "Reed's method" without any rousing effect being produced: the patient became, to all appearance, quite asphyxiated. Dr. May now commenced slapping him with the palms of the hands on the chest and buttocks, and had cold water poured from a height on the centre of the patient's chest. In three or four minutes, he gave a deep inspiration; the air was expelled by gentle pressure of the chest; and this was repeated several times—the cold affusion being assiduously continued—until recovery took place, which was perfect in half an hour.

TESTIMONIAL TO EDWARD DANIELL, ESQ. A few of the medical friends of our esteemed associate, Mr. Daniell of Newport Pagnell, have recently presented him with a handsome silver salver, with an inscription setting forth that it is intended as a recognition of his unwearied labours in past years for the establishment of a British Medical Fund, and expressing the hope that the scheme which he originated may yet be carried out to perfection. It is probably well known to many of our readers that Mr. Daniell, while recognising the high merit of those schemes of benevolence which have been devised for the support of the less fortunate among the medical profession, has for many years consistently urged the establishment of a system of mutual support, consisting of the raising of a fund within the profession, to which its members, or their widows or orphans, should have an absolute right, as contributors, to apply in time of distress. In his reply to the donors of the testimonial, Mr. Daniell thus draws the distinction between those cases in which charity from without may be applied, and those in which aid ought only to be looked for from mutual combination. "In the great battle of life, many will be irretrievably conquered. To such the hand of charity may be freely extended; and the blessing of God is upon those who extend it, for he 'who giveth to the poor lendeth to the Lord'. But this has no application to those who, with the vigour of life upon them, and the means within their reach, neglect that mutual combination and the establishment of a system which may, in the time of need, afford help not as a gift, but as a right. If statistically the lives of medical men be lower in the scale than those of other professionals (and this fact has not been gainsaid), how more than ordinarily necessary is it that, by combination, some means should be adopted generally to avert the calamity arising from early death, and to provide honourably for the destitute widows, and still more destitute orphans."

PROFESSIONAL CONFIDENCES. The question as to the power of courts to compel the medical witness to disclose facts confided to him in his professional capacity, has long been of extreme interest to medical jurists. The common law takes cognisance only of the confidence between man and wife, and attorney and client, and admits this only to a limited extent. Accordingly, the courts of England have compelled medical witnesses to testify without reserve. In several of the United States, however, statutory provisions are made protecting the medical witness in refusing to "disclose any information which he may have acquired in attending any patient in a professional capacity, and which information was necessary to enable him to prescribe for such patient as a physician, or to do any act for him as a surgeon." Where this special statute does not exist, the medical witness has been supposed to be placed upon the same footing with ordinary witnesses, by the common law. But, in a recent trial in the Muskingum County Pleas, Ohio, we learn, from the *Columbus Review*, that "the question arose as to the power of the courts to compel a medical witness to give testimony involving a breach of professional confidence. After being fully argued, the court (Judge Marsh presiding) held that a medical witness could not be compelled to disclose facts confided to him in his professional capacity." (*American Medical Times.*)

PUBLIC HEALTH IN SCOTLAND. The Registration return in Scotland for the second quarter of the year 1860, states this period to have been more unhealthy and to have resulted in more deaths than in any of the corresponding quarters of the preceding five years. Not only were an unusual proportion of aged persons cut off, but affections of the respiratory organs were unusually prevalent, largely increasing the number of deaths.

HEALTH OF LONDON—SEPTEMBER 8TH, 1860.

[*From the Registrar-General's Report.*]

	Births.	Deaths.
During week ..... { Boys .. 887 / Girls .. 860 }	1747 ..	968
Average of corresponding weeks 1850-9	1571 ..	1142

Among the causes of death were—bronchitis, 56; pneumonia, 44; phthisis, 116; small-pox, 5; scarlatina, 59; measles, 33; diphtheria, 2; hooping-cough, 27. The deaths from pulmonary diseases (exclusive of phthisis) were 119, being 31·4 above the corrected average.

Barometer:

Highest (Fri.) 30·140; lowest (Sun.) 29·788; mean 30·023.

Thermometer:

In sun—highest (Fri.) 118·0 degs.; lowest (Th.) 81·0 degs.

In shade—highest (Fri. & Sat.) 69·7 degs.; lowest (Sun.) 44·1 degs.

Mean—56·0 degrees; difference from mean of 43 yrs.—2·2 degrees.

Range—during week, 25·6 degrees; mean daily, 20·8 degrees.

Mean humidity of air (*saturation*=100), 88.

Mean direction of wind, Var.—Rain in inches, 0·01.

TO CORRESPONDENTS.

THE MEDICAL DIACONATE. We have received a communication from Dr. J. Watson, expressing his regret, if, in strongly expressing his feelings in his former letter, he used terms which were in themselves offensive to any of his fellow-associates. He assures us that he had no sectarian feeling, but was merely desirous earnestly of keeping the church and every church at an appropriate distance from our secular profession. We hope this explanation will be satisfactory, and that the subject of denominational dispute will now be allowed to drop.

ANONYMOUS CORRESPONDENTS should always enclose their names to the Editor; not for publication, but in token of good faith. No attention can be paid to communications not thus authenticated.

Members should remember that corrections for the current week's JOURNAL should not arrive later than Wednesday.

Communications have been received from:—DR. W. HINDS; DR. T. OGIER WARD; DR. R. D. TANNAHILL; MR. WORKMAN; DR. LIONEL BEALE; MR. P. C. PRICE; MR. J. DULVEY; MR. C. J. EVANS; MR. C. E. WRIGHT; DR. PORTER; MR. GRAMSHAW; DR. J. WATSON; DR. WALKER; MR. W. J. SQUARE; DR. A. T. H. WATERS (with inclosures); DR. W. ADDISON; MR. POSTGATE; DR. QUAIN; and DR. PURSELL.

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